

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

62.67

1931

LIBRARY
RECEIVED

★ FEB 5 1931 ★

U. S. Department of Agriculture.

SCOTT'S SEED GUIDE

For the front cover illustration we have appropriately chosen to picture a field of Soybeans grown on our own farm. » » »

A field like this is sure to return a good profit. Are you utilizing soybeans to the fullest possible extent?

SCOTT'S

SEED GUIDE



Directs you in the Way
of Greater Profit

1931

O. M. SCOTT & SONS CO.

MARYSVILLE, OHIO



CONTENTS



	Page
HOW TO KNOW GOOD SEED.....	4
WEEDS	8
LEGUME CROPS	
Soybeans	11
Sweet Clover	27
Alfalfa	37
Grimm Alfalfa	43
Red Clover	45
Mammoth Clover	47
Alsike	48
Crimson, White Dutch, Japan Clover.....	50
Vetch	52
Canada Field Peas	53
HAY AND PASTURE GRASSES	
Timothy	54
Kentucky Bluegrass	54
Orchard Grass	55
Redtop	55
Pasture Mixtures	56
Meadow Mixtures	57
FORAGE AND CATCH CROPS	
Sudan Grass	58
Millet	59
Dwarf Essex Rape	59
GRAIN	
Corn	60
Wheat	62
Oats, Rye	63
Barley, Buckwheat	64
LEGUME INOCULATION	65
HOW TO ORDER	68
WEIGHT AND QUANTITY CHART.....	72



FOREWORD



This is a book of facts—facts about seeds and seed buying.

For sixteen consecutive years we have issued this guide confined mostly to information of demonstrated practical value to the farmer.

Necessarily a book of this kind cannot be wholly new each year, but each succeeding issue after the first one has been revised to present the latest available information.

Incidentally, we are using just a few of the following pages to tell you something of the history of Scott's Seeds. We hope you will read how Scott's Seeds are selected and recleaned to be free from weed seeds, dead and immature grains.

NOTE: Extra copies for interested friends are always available.



How to Know Good Seed

The qualifications which usually determine whether seed is good, are freedom from weeds, absence of waste or inert matter, good germination. Of these three the most important is freedom from weeds. Sowing chaff or dead grains wastes money on that particular crop, but this is usually the extent of the damage. Sowing weeds, however, not only wastes money on the particular crop—by robbing the soil of plant food and moisture, increasing harvest costs, lowering the value of the crop—but also puts weeds on your farm which will decrease the value of future crops. It will pay you to carefully examine the seed you intend to sow, to avoid sowing weedy seed. A means of identifying some of the worst weeds is given on pages 8 and 9.

Your own State Department of Agriculture will analyze seed samples for you without charge. This is the best way to learn the real value of seed, but if it isn't convenient to wait for their report you can determine for yourself what the seed you propose buying is actually worth. A certain yet simple method is given here.

Test for Purity

Take a level teaspoonful of each of the seed samples which you want to examine. Place them in separate piles on a piece of white paper. Scrape to the side of each pile all waste matter, such as weed seed, chaff, and dead grains. This operation will show you the amount of worthless matter in each lot and is your guaranty of getting pure seed and your money's worth.

Remember, that a bushel of seed will contain six thousand times the waste matter or weed seeds found in a teaspoonful, and that three weeds in a teaspoonful means that one will be sowed on every square yard of ground.



**Test for
Germination**

To make a germination test, remix the seed and count out 100 seeds. Be sure to take them just as they come, and do not choose the best grains, for the object is to find out what percentage of the total seed will grow.

The seed may be planted in a box of moist dirt or sand, or may be put between two blotters or strips of canton flannel, placed on a plate covered with another plate turned upside down. This prevents evaporation. Keep the blotters moist, but not in water, and as near the temperature of 70 degrees as possible. Examine the seeds daily and see how they are germinating. Sprouted seeds may be removed each day if desired. Some seeds require a longer time to germinate than others. The proper germinating periods are as follows:

Clover seed between three and six days.

Timothy and Red Top, five to eight days.

Orchard Grass, six to fourteen days.

Kentucky Bluegrass, fourteen to twenty days.

The use of these tests has convinced many seed buyers that it is to their decided advantage to sow Scott's Seed every year. They write us that they are grateful for a source of good seed, and prove this by sending us their orders each season. In speaking of Scott's Seed, Mr. C. A. Stevenson, of Canal Winchester, Franklin County, Ohio, says:

"Seed arrived in O K shape. I have been buying seed for 40 years and have made it my aim to buy the best grade possible. Your seed surely is well cleaned and fine quality. Thanks for prompt and fair dealing."

There are very definite reasons why our customers are not buying seed of "unknown quality." The business was founded for the purpose of supplying field seeds of the best possible quality, and, above all things, free from weed seeds. The next few pages tell how we are able to do this.



Why Scott's Seeds

Field seeds is a career to us. Years ago we saw the possibility of a real field seed service and for over sixty years we have maintained this purpose, namely: *To sell field seeds only*, and to furnish better field seeds than could be had elsewhere.

If there is anything in the world that doesn't just happen, it is pure field seeds. To supply them requires personal interest, concentrated attention, and nerve. Every year the task we set to find pure seed is a greater one.

Carefully Selected

To furnish seed of Scott quality it is necessary for us, first of all, to select it carefully. More than 50% of the seed which we examine in the selection of our stocks is rejected because it cannot be re-cleaned to our minimum requirement. Some weed seeds cannot be removed, no matter how many times the seed is re-cleaned.

Another important precaution in selecting the different kinds of seed is to get that which we know is adapted to growth in the sections where our customers expect to sow it. Sowing unadapted varieties of seed almost always results in failure. Most of the imported seed, and much that is grown in our own country, is not satisfactory for use in the central, eastern and northern portions of the United States. This is especially true as regards the winter hardiness of alfalfa. You can buy Scott's Seed with the assurance that you will get seed adapted to growth in your territory.

"The grass seed I ordered from you came last week and must say it is fine seed. I have been buying seed for close to 50 years and never got seed like this before. I examined it with a glass and could find nothing but pure, well filled, well matured and well ripened seed.

"The clover seed is simply the best I have ever had. Will always buy my seeds from you."—L. T. Spicher, Rochester Mills, Indiana County, Pa.



**Carefully
Recleaned** Even after we have carefully selected the seed, the battle is only half won. Waste matter, and more particularly weeds, must be removed by thorough recleaning. This is done very carefully and in a way that causes customers to write us their appreciation, as does Jesse Courts, West Hamlin, Lincoln County, West Virginia:

"Received oats and grass seeds in first-class condition. The seed is the best I ever saw. I congratulate you on your seed and honesty in advertising true facts. If more farmers would sow Scott's Seed there would be better meadows and pastures with less obnoxious weeds."

While Scott's Seed is carefully selected and thoroughly cleaned, it actually costs you less than ordinary seed in which there is certain to be many weeds and much waste matter. The large amount of bulk we remove in the form of waste matter and weeds means much more to the purchaser than any slight difference in price.

Fifty pounds of pure, practically weedless, clover seed will give you a more profitable stand on a five-acre field than will 60 pounds of inferior seed. That means that instead of paying \$15.00 for a bushel of inferior seed, you could better afford to buy 50 pounds of a \$17.00 grade of seed, which would cost you only about \$14.50 and yet produce a better crop. To the seller there is always a bigger profit on second-grade seed. To the sower there is always a bigger profit on pure seed.

"The clover and alfalfa seed ordered of you arrived all O. K. It is of the same excellent quality, free from weed seeds and contains no shrunken or immature seed. I have used your seed for several years and have never failed to get a good stand.

"On account of the good quality of your seed, I am sowing one quart less per acre and get a perfect stand."
—L. C. Bradley, Interlaken, Seneca County, New York.



WEEDS

It is hard to conceive of the actual financial loss caused by weeds on the farm. The figures for the country as a whole run into *billions*, while estimates put the average loss for each farm as high as \$500.00. This loss would not be so appalling were it not for the fact that much of it can be avoided by *sowing clean seed*.

Weeds can be considered as levying taxes on farms. Here are some of the ways that they do it:

1. By reducing the quantity and quality of crop products.
2. By harboring disease organisms, insects, and worms, which attack crops.
3. By increasing labor and equipment costs on farms.
4. By reducing the quantity and quality of livestock products.
5. By increasing commercial labor and equipment costs.
6. By causing depreciation of land values.

How to Fight Weeds

The real time to fight weeds is discussed in the section called "How to Know Good Seed." It is easier to carry on the battle described there when it is simply a case of refusing to buy inferior seed. One slip in seed buying is enough to cause weed trouble for years to come. *Prevent weeds* by sowing pure seed. That beats fighting them.

But, as we must concede the existence of weeds, the following suggestions may prove helpful in combating a few common varieties—guard against these in the seed you buy.



BUCKHORN. Found very often in clover and alfalfa seed, as it is practically the same size and cannot be cleaned out except by special machinery. The seeds are brown, hollow grooved on one side, and moisture causes them to become sticky.

This perennial can be controlled by cultivation and sowing pure seed. Badly infested fields should be plowed up and worked under a short rotation of crops.



CANADA THISTLE. Found in timothy, alfalfa, clover, Canada bluegrass and small grain. This perennial usually grows in patches and is considered the worst weed in many northern states.

Can be eradicated best during drought. All plants must be destroyed, a good plan being to starve the underground parts by keeping down the top growth. A good method is to smother it out by using alfalfa as described on page 38.

Some use a chemical spray, such as sodium chlorate, to eradicate this pest. Sprays are usually considered as a last resource because of the expense and poisonous nature of the chemicals.



DODDER. Parasitical plants that attach to and live upon clovers and alfalfa. Seeds about the size of alfalfa. Seeds about the size of alfalfa, yellow-brown in color, pebbly surfaced, somewhat spherical in shape often with two flattened surfaces. The plant grows from seed only.

Sow Clean Seed. In small areas cut infested plants close



to ground, let dry and burn after soaking with kerosene. Large areas should be plowed before the seeds ripen and the field kept in cultivated crops for several years.

April 10, 1930.

"The seed I ordered came today in good shape and looks good. This is my first seed order from you. Frankly I will tell you why I ordered from you. I am a rural mail carrier and carry a good many of your catalogs, so one day I wrote for one just to see what you had.

"Well, it looked good so I thought I would take a chance. Several of my patrons are your patrons and they all speak well of your seed."

GUY V. HILL,

Sistersville, Tyler County, W. Va.



Shock of soybean hay. A dependable annual hay—high in protein—easy to cure and mow away—greedily eaten by animals.



SOYBEANS

The grower who will be short on hay from his regular meadows in 1931 may well look to Soybeans for "relief." This leguminous hay is equal in feeding value to alfalfa; and its use keeps down livestock feeding costs by replacing high-priced supplementary feeds.

WHY grow Soybeans? This question is logically asked by those who believe they have enough crops now without adding another to the rotation.

To answer briefly, those who have tried Soybeans have become convinced that the adding of another legume is good business. They have found that Soybeans give better crops of the following non-legume grasses and grains in the rotation, because of the fertility stored in the soil; that they furnish a crop of high feeding value as hay and seed; and that the seed crop has a definite cash market value.

Soybeans can be raised more easily than any other legume. They will grow on soils too acid for clover; are not much subject to disease or insect injury; fit readily into crop rotations; can be planted anytime from early spring to late summer; are drought resistant; and the cost of the seed is relatively low.

Because of many varieties, with different climatic requirements, it is possible to utilize Soybeans in practically the entire United States and in southern Canada. Some varieties will mature as far north as central New York, while others will not ripen except in the south.



Utilizing Soybeans

Soybeans may be used advantageously as either a seed or forage crop, that will fit readily into rotations. The beans make an excellent stock feed, either whole, or ground alone or with other grains. Soybean hay is equal in feeding value to alfalfa hay. Another method of utilizing Soybeans is as a pasture crop, either grown alone or in combination with corn. Then, too, the market for the seed provided by oil mills and other commercial concerns should not be overlooked.

Hay

As a hay crop Soybeans show up especially well, and it is probably for this use more than any other that they are appreciated. A satisfactory yield of highly nitrogenous hay can be produced which is uniformly good for all classes of livestock.

Hay for All Stock

Soybean hay is an excellent and palatable feed for dairy cows. It is equal to red clover, alfalfa or cowpea hay in milk and butter production. According to the Illinois Station it will take the place of alfalfa hay in feeding ewes and fattening lambs. It will also suffice as the sole leguminous roughage in the winter ration for horses.

"Grow Soybeans" is the answer to the yearly problem of stockmen as to how to produce more legume hay. They will fit into any rotation and provide a good substitute when clovers have winter killed or failed to catch.

The best variety of Soybeans for hay is one that is tall and has slender stems. The low growing kinds bear leaves and pods too close to the ground for entirely satisfactory harvesting. The Wilson, Peking, and Virginia varieties are probably the most desirable in the central states and generally produce the most abundant hay. On heavy clay ground the Virginia does particularly well. The best earlier hay varieties are Manchou, Midwest and Mansoy.



Pasture

By growing Soybeans it is possible to have a good green pasture during August and September when most other pasture crops are dry and undesirable. Stock may be turned into the pasture when pods are formed and the foliage still abundant and green. With hogs pastured in this way, and having a part ration of corn, too, an increase of 400 pounds of pork per acre may be expected from the Soybeans. Sheep or lambs do especially well and will show gains of approximately 350 to 500 pounds of meat per acre. They will not only clean up the beans but weeds as well, making conditions ideal for the seeding of fall grains.

Soybeans and Corn

Growing Soybeans in corn is recommended as a good practice to provide pasture for sheep and swine. In spite of the fact that the corn crop is probably reduced thereby, this practice is not objectionable, as the purpose in modern farming is to raise the maximum amount of balanced ration feed rather than large yields of grain.

Swine and sheep can be turned into Soybeans and corn about September first. Lambs or pigs up to 50 or 60 pounds will eat the beans without damaging the corn, thereby making it possible to harvest this later, if it is so desired. If the entire crop is to be pastured, sheep or hogs of any size may be turned in. The stock will take on fat and improve in general condition wonderfully. Unless weeds are apt to bother, it is well to plant Soybeans in all corn fields where possible to utilize them. Among the chief problems of the farm is economical harvesting of the corn crop and the return of manure to the land with the least possible loss or waste. Harvesting well balanced companion crops of corn and beans the livestock way solves both of these problems at once.

It is a good plan, if convenient, to feed Soybeans to stock a few days before they are put into the field, so that they



will become accustomed to, and eat the bean readily, otherwise the larger animals will favor the fresh corn.

Seed

Several methods of utilizing the Soybean seed are available to those who produce it. The beans can be used either as a stock feed, or sold to commercial firms who have developed markets for various Soybean products.

Feeding Value

Because of their high food value, the entire substance of the beans makes an excellent feed, either whole or ground. Whole beans are often fed in self-feeders to swine and The Indiana Station found that the whole beans produced a gain of 29 pounds in lambs, as against 25 pounds for cottonseed meal when fed as a supplement to corn. They also found that one pound of Soybeans fed to spring pigs replaced a pound of tankage. Ground beans make an excellent dairy or beef cattle feed and will replace linseed oil meal to advantage.

Cash Outlet

Several oil extracting mills located principally in Ohio, Indiana, and Illinois now purchase beans in large quantities for the purpose of extracting the oil. Some of these mills will contract in advance for the beans guaranteeing to pay a minimum price, regardless of the market, without any obligation on the part of the grower if he decides to sell elsewhere. This has stimulated the production of Soybeans, especially where they can be raised in large acreages. This policy will help reduce the acreage of some cash crops that usually run into the surplus stages.

One by-product of the oil mills finds its way back to the farm and that is, the residue after the oil has been extracted. This is called Soybean meal and is as rich in protein as the best grades of cotton seed or linseed meal.



If Soybeans are to be grown for seed production, the variety selection should be given careful consideration. Not only is it important that a type be selected which will mature seeds in the section planted, but it must also be a variety that will hold the seed well without much loss from shattering.

Silage

The seeding of Soybeans with corn for silage is very generally practiced. However, there is considerable difference of opinion as to whether worthwhile yields are received, and as to the feeding value of this silage mixture. Sometimes the two crops are grown separately and then put into the silo at the rate of three loads of corn to one load of beans. It is important, in growing Soybeans for this purpose, to plant a variety that will make not only a maximum growth of vine, but also develop beans by the time the corn is ready for the silo, and retain the leaves until the crop is gotten into the silo.

Green Manure

Plowing under a crop of Soybeans for soil improvement is a good plan seldom followed. Some of the benefit can be gotten by pasturing the crop and then plowing or disking the land. The plant residues and manure are returned to the ground and at the same time a nice profit is taken off in the stock fed.

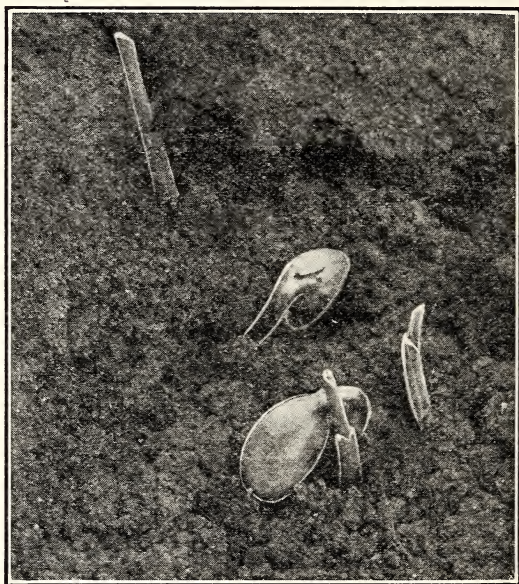
Soil Requirements and Preparation

Soil and Climate

Soybeans will succeed on nearly all types of soil. They will do better than any other legume on soils that are acid or of low fertility. In general the soil requirements are about the same as those of corn, provided the proper bacteria are present or the seed is inoculated with the correct legume bacteria.



This legume is well adapted to both the corn and cotton belts. In the southern part of the corn belt the larger and later varieties, which give yields that make their cultivation profitable, can be grown. In the central section medium early varieties are grown successfully for forage and ensilage purposes and the earlier kinds for the production of seed.



Showing why shallow planting of soybeans is necessary. The sharp gimlet-like sprouts are those of corn which can make their way through a heavy over-layer of soil or around a clod more easily than a young soybean which must force the entire swollen seed to the surface. A bean may actually "break its neck in trying," but that does nobody any good. Shallow planting with a fine compact seed bed is a necessity with soybeans. (Courtesy American Soybean Association.)

**Seed
Bed**

Like corn, Soybeans respond to good seed bed preparation. It is advisable to plow the heavier soils, even on corn stalk ground. Both the Ohio and Indiana Stations secured substantially better yields when the corn stalks were plowed under rather than disked. Husks and stalks of corn interfere with cultivation unless removed or completely plowed under. Often it is best to double cut corn fields with a disk before plowing. Before seeding, the ground should be cultivated at intervals, as Soybeans may be crowded out by a rank growth of weeds.

In planting Soybeans a well pulverized, compact seed bed is necessary, because the moisture so essential for germination and seedling growth cannot rise through open, porous ground. It is very important that all voids and holes be filled.

The last operation in preparing a seed bed should be performed with implements which kill weeds without dragging up from below a fresh crop of weed seeds to germinate. An ordinary spike tooth or smoothing harrow, or a weeder, is a good tool to use for this purpose.

**Good
Seed**

There are several different methods of planting Soybeans, the method used depending somewhat upon the purpose for which the crop is intended. Unsatisfactory results are very often due to the use of the wrong variety for the purpose intended. Very early varieties should not be planted for hay and silage nor should late beans be planted for seed production. It is highly important, then, that seed should be procured from a seedsman who is thoroughly familiar with the different varieties. Since we have handled and studied Soybeans for so many years, we feel well qualified to suggest the proper variety to fit your needs. It is also well to guard against the presence of wild morning glory in the seed. Many



beans, too, are put on the market before they are well cured so that the germination is apt to be low. A wise precaution is to plant Scott's Soybeans.

Seeding

When to Plant

It is possible to plant Soybeans any time after all danger of frost is past and the ground is warm. Common practice seems to be to seed a few days after corn planting time, the advantage being that the ground can be given an extra cultivation to kill weeds and then, too, the press of other farm work is usually not so great. However, earlier planting will ordinarily result in larger yields of both hay and seed. If a seed crop is to be raised, the seed should be planted as early as possible, but for hay or green manure even August first is not too late, the variety used making some difference. Generally speaking, Soybeans may be planted any time in May or June with good results in the vicinity of the 40th parallel.



Harrowing Young Soybeans.



Inoculation In common with other legumes Soybeans are able to utilize the nitrogen of the air when the proper bacteria are present in the soil. The presence of these organisms is indicated by development of nodules on the roots. In ninety-nine cases out of one hundred if the seed is not inoculated, no nodules will develop, unless a crop of inoculated Soybeans was grown on the land previously.

While the plants which have not been inoculated may appear to grow as well as those which have been inoculated, they will do so at the expense of the soil. Another thing, when Soybeans are inoculated, the protein content of the forage and seed is greater. Uninoculated plants usually have a pale green or yellowish color, as contrasted to the darker green of the inoculated plants. A special price on Scott's Bacteria for Soybeans makes the cost of inoculating the seed reasonable.

Depth The depth of seeding is of much importance, as poor stands often result from covering too deeply. The most favorable depth will depend upon the type of soil, but in general should not be over one or possibly one and one-half inches at the most.

Well selected seed is necessary for best results in growing Soybeans. A chipped or cracked seed is unsafe, broken and split beans produce nothing but a loss, as they prevent a full seeding. Worst of all is the presence of weed seeds.

We have the most improved machinery for cleaning Soybeans and believe that we are furnishing better seed than can be secured most places. Scott's Soybeans are free from wild morning glory as well as other noxious weeds and are always of good germination.

**Hay and
Pasture**

Drilling the seed solid, using the oats feed of a grain drill, has proven to be the most practical method of growing Soybeans for hay, pasture, silage or soil improvement. The exception to this rule is when weeds are apt to be bothersome. By planting solid the forage produced will be of finer quality and there will be an intensified use of atmospheric nitrogen. The usual quantity sown is one and one-half to two bushels per acre, depending upon the size of the seed.

**For
Seed**

In planting Soybeans for seed production they are often seeded in rows in order to make cultivation possible. The weeds can be kept down and the seed may mature to a larger size and better quality. A grain, beet, or bean drill can be used by stopping up part of the the holes. Formerly when seeding in rows about 15 to 25 pounds of seed was sown to the acre, but now the larger producers find that it repays them to sow 45 to 60 pounds, or even more, by placing the seed closer together in the rows. The rows may be from 14 to 32 inches apart, depending upon the available equipment for planting and cultivating. The seed should not be planted more than one to one and one-half inches apart in the rows. Many growers recommend solid planting, even for seed. This is satisfactory if the ground is not weedy and a rotary hoe or like implement is available for cultivation. This method takes more seed but less cultivation. About 90 to 120 pounds should be sown per acre.

**With
Corn**

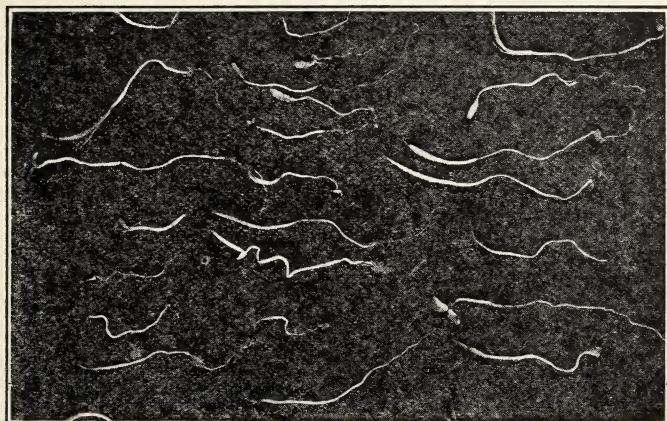
By using a bean attachment on the corn planter, Soybeans and corn can be planted at the same time. If necessary, the beans can be planted after the corn by carefully retracing the rows and planting not over one inch deep. The corn is drilled at the usual rate and the beans at about six to eight pounds per acre.

Soybeans may be mixed with cowpeas, sorghum or sudan to make a balanced forage. Ten pounds of sudan or sorghum mixed with 45 to 60 pounds of Soybeans makes a good hay. Sudan matures quickly and should be used with early maturing varieties only.

Culti- vation

It is necessary to cultivate Soybeans for two reasons—to kill weeds and to break a crust after a beating rain. In case a heavy crust does form before the beans are out of the ground, it is well to break this crust so the plants won't break their necks in coming through. A spiked harrow or rotary hoe does this job well. Sometimes the soil gets so hard a rotary hoe will not break it. In that case a disk set straight does a good job with surprisingly little damage to the beans.

The time to cultivate for weeds is when they are very small, before they have pushed through to the surface. In this germinating stage weeds are often spoken of as being "in the white" and are then most easily killed (see illustra-



Germinating tiny weeds "in the white." When these can be uncovered in a soybean field it is time to cultivate. (Courtesy American Soybean Association.)



tion). Many growers insist upon cultivation at this time, regardless of the size of the beans or state of germination. Their contention is that some plants may be killed, but not nearly as many as the weeds would choke out and dwarf.

If possible, beans should be cultivated during the heat of the day when the plants are dry and tough. Solid seedlings will usually make enough shade to discourage weed growth after they are a few inches high. Row seedlings must be cultivated longer, but in no case should cultivation continue after the plants begin to bloom.

Solid seedlings are best cultivated with a rotary hoe or possibly a weeder or harrow. Row seedlings are commonly cultivated with corn machinery.

Harvesting

For
Hay

The time to cut Soybeans for hay will be determined by weather conditions, press of other farm work, and the variety of beans. Ordinarily, the earlier varieties can be cut before the first of September and so the work will be out of the way by corn harvest and silo filling time. Soybeans may be cut for hay at any time from the forming of the seed until the leaves begin to turn yellow. They are most suitable for hay, however, when the beans are small and not well developed, as when the beans are large the slowness of curing may result in mouldy pods. At this stage the quality of hay is usually the best. If the cutting is delayed, the stems become more fibrous and decline in feeding value and, if left too long, much loss in leaves will occur.

Soybeans are usually cut with a mower and left on the ground until wilted. Then they may be raked into windrows and allowed to complete curing. Sometimes the hay is taken up direct from the windrows. In rainy seasons it must be placed in tall, loose cocks for a week or ten days.



This should be done while the plants are damp from dew, as they will be more tough and the leaves will not shatter as much. Rain generally does not hurt the quality of the hay except to discolor it. Some growers are convinced that Soybean hay cures better and quicker in the windrow than in the cock, even in rainy weather. Curing in this manner necessitates the use of a side delivery rake and that the windrow be turned occasionally to keep the bottom from moulding because of contact with the ground.

The swath method of curing the hay may be practicable if the seed had been planted solid and there is a good stubble to hold the hay away from the dirt and maintain an air space for thorough curing. After being thoroughly cured, only enough of the hay should be raked at one time to occupy the force of haymakers for one day.

Soybean hay is not ready to put into the mow until the inside of the largest stems and interior of the largest seeds feel perfectly dry. Even in dryest weather this may take several days and often weeks in unfavorable weather.

For
Seed Seed cures to best advantage on the stalk, so beans should not be cut for seed until absolutely necessary to prevent loss from shattering. A good guide is to wait until the pods are fully formed and brown and the seed in the hard dough stage. By this time most of the leaves will have fallen off. The grain binder is generally used, but sometimes it is necessary to use a mower if the stalks are short or badly lodged.

If the beans are not allowed to get thoroughly ripened—some varieties must be cut early or too many beans will be lost—the crop should be put into cocks until well cured, otherwise the seed may be damaged when stored in bins or sacks.



Combine Harvesting

There are great advantages in harvesting a Soybean seed crop with a combine. The saving in time is important and the beans can be harvested ready for storage for a much lower cost per bushel. But just as important is the fact that the beans can be allowed to get fully matured, thereby eliminating danger of spoilage. One objection to combine harvesting is the loss of straw which might otherwise be used as winter roughage. However, this is offset by the soil improvement furnished by the leaves, which contain much nitrogen.

Threshing

The ordinary grain threshing machine may be used to thresh Soybeans. Some change in the concaves is necessary, and the speed of the machine must be cut to avoid splitting the beans. Some of the special pea and bean hullers on the market will also thresh Soybeans satisfactorily.

Varieties

It is said that more than 2,000 varieties of Soybeans have been studied and described in the United States. Of this list only a few have shown any real agricultural value.

In the following pages we describe the most popular varieties and those which our experience has proved best suited for the purpose intended. The number of days for ripening of beans will vary somewhat with the locality and weather conditions, and the time of seeding determines to a large extent the number of days it will take to mature the beans. Those seeded in early May will mature somewhat earlier than those seeded in June, but the difference of time of maturing will not be so great as the difference in planting dates.

The date of maturity of the different varieties fluctuates considerably in different seasons. Occasionally some varieties which are ordinarily the first to ripen do not reach maturity until after some of the later kinds.



Yellows

ITO SAN. Once the best known early variety. Still popular in some sections. Early maturing.

MANCHU. Introduced from Manchuria in 1911. Plants erect and well suited for "hogging off" with early corn. Is by far the most popular variety and has almost completely taken the place of other early kinds, such as Ito San, Early Brown and Black Eyebrows. A large seed producer and suitable for early hay. Holds seed well. Early maturing.

DUNFIELD. Matures about the same time as Manchu. Suitable for hay or seed production. Has been popular in Indiana, but has not equalled Manchu in yield in Ohio tests. Early maturing about same as Manchu.

MIDWEST. Formerly called Hollybrook. Gives good results for hay or silage, but it is considered a little late for safe seed crops in the central states. Medium early maturing.

ILLINI. An Illinois Experiment Station selection, about five days earlier than Manchu. Primarily a seed type which gives good yields and holds its seeds well. Satisfactory for early hay. In Illinois, seed growers like it because of early maturity, little shattering, and good production.

MAMMOTH YELLOW. Too late for the north.

Blacks

WILSON. This variety has been in great demand since it was first offered by the Department of Agriculture. Probably the best known all-round variety for hay and silage. Stems are fine and it produces a large quantity of hay of the highest quality. Late maturing. Owing to drought in producing sections, the 1930 Wilson crop is very much below normal and the market will no doubt be rather high. As a substitute we recommend the Virginia or other late beans that may be more economical to plant.



EBONY. Matures a few days earlier than the Wilson. A good hay variety and seed more plentiful than last year, when the crop was short and of inferior quality.

PEKING or SABLE. One of the best hay types, will grow well on practically all soils. Excellent for growing in corn for silage purposes. Medium late maturing about same as Wilson.

Browns

VIRGINIA. Grows tall and slender with twining tips, making it one of the most desirable beans for hay and for planting with corn for silage, as the vining tendrils cling to the corn. It is the best hay variety for the heavier soils, but on real rich ground it is sometimes inclined to lodge. Late maturing.

Mixed Beans

Ordinarily it is possible to furnish mixed beans at prices lower than those prevailing for the separate varieties.

See Freight Paid offer page 71.

January 31, 1930.

"I have 65 acres of land, keep 15 head of cattle, 3 horses and feed them hay raised from Scott's Seed, the cleanest and best I ever saw. My fields of clover are a delight to myself and neighbors. Two and one-half tons per acre not uncommon. I filled a silo 10x32 feet last year from one bushel of Scott's Seed Corn.

"I am a crank on good seeds, that is why I buy from Scott's."

J. O. GOULD,
Summersville, Jefferson County, Pa.



SWEET CLOVER

A valuable legume. Provides pasture rich in protein. Enriches soils wonderfully and prepares them for alfalfa. Practically disease free and will grow on almost any soil if lime is present. Very drought resistant.

SWEET CLOVER has come to be known as "the universal plant" because it can be grown in nearly all parts of the world. This designation has led some to believe that it would thrive anywhere and under all conditions. Unfortunately this is not true, although it will grow under a wider range of soils than either the true clovers or alfalfa. However, it will not grow on an acid soil and it must be inoculated with the proper bacteria.

Of the many varieties of Sweet Clover only a few have been shown to have any agricultural value. The white biennial is by far the most important and is the variety referred to unless otherwise stated. A short description of several varieties is given at the end of this chapter.

Utilizing Sweet Clover

The extensive root system of Sweet Clover makes it a high-powered soil builder. Its roots will gather the little plant food remaining in worn-out soils, and their deep penetration improves the drainage. If properly inoculated, a crop will add considerable nitrogen to the soil. Like other crops, Sweet Clover responds to the use of fertilizer and will give better yields on poor soils if phosphorus and potash are applied.



Because it is extremely drought resistant, once established, Sweet Clover will furnish good pasture when other pasture plants fail. At the same time it will carry more stock per acre than ordinary pasture crops.

First-year Sweet Clover hay is equal to alfalfa in composition, palatability and feeding value. It is usually superior in protein content. Spring seedings ordinarily produce tremendous yields when cut in August or September.

As a universal plant it leads all others, for it will not only grow in any climate, but also on soils where alfalfa fails. It has the same nitrogen fixing bacteria as alfalfa and so prepares the way for the latter by thoroughly inoculating the soil and by improving the drainage. It prevents erosion and seldom freezes out during the winter or spring. For many years beekeepers have recognized the value of this clover, as the honey from the flower is of good color and flavor.

Another important advantage of Sweet Clover is that it produces seed liberally wherever grown. The yields are high, averaging four to six bushels per acre, and sometimes as much as ten or twelve bushels is secured. The seed is ordinarily considerably cheaper than that of other clovers.

As a Green Manure Crop

Sweet Clover should be grown more extensively as a soil improvement crop because: it will add nitrogen to the soil, supply an abundance of organic matter, and at the same time improve the drainage. One particular advantage of Sweet Clover is that it can be grown on land between crops of small grains so that the use of the land is not lost for a season, as is the case with so many soil improvement crops.

Nitrogen Supplier

Why buy commercial nitrogen when Sweet Clover will take it from the air and pay you for doing it? At the Ohio State University Farm a four-year experiment showed that the least amount of nitrogen present in Sweet Clover, May 1 of the second year, was 120 pounds per acre. Furthermore, this nitrogen is available



to the succeeding crops as rapidly as they can make use of it. But, in order to provide this nitrogen, Sweet Clover must be inoculated with the proper bacteria, for without these it cannot secure nitrogen from the air and will not make a thrifty growth. Another unusual ability of Sweet Clover is that it can get to and make use of the less available sources of plant food. This is gathered from the deep layers of the soil by the roots, and when these roots decay, the following crop is benefited by the stored up fertility. By this we see that Sweet Clover makes available, conserves and adds to the fertility of the soil.

**Improves
Drainage**

Besides improving the soil chemically, Sweet Clover also improves it physically. The underground growth loosens the soil so that it plows more easily and at the same time the additional amount of humus is helpful in many ways. As the large roots decay, they leave open channels through the hard subsoil, thereby greatly improving the drainage. Growers have found that Sweet Clover will put soil in such a condition that drain tile, which previously proved inadequate because of the increasing compactness of the soil, will then be able to keep the land free from excess water.

**Plowing
It Down**

Extensive experiments have shown that the best time to plow under a crop of Sweet Clover is between April 20 and May 10 of the second year. At this time—the plants are killed without difficulty, a corn crop to follow can be planted early enough for maximum yields, and 80 per cent of the greatest possible amount of nitrogen which can be accumulated is secured.



As Pasture

For All Stock

It has been proven (by the University of Illinois Station) that Sweet Clover is capable of carrying as much or more live stock than any other kind of pasture. A five-year average of Sweet Clover pasture, available the fall of the first year with the total available the second year, gives 150 pasture days against 101 pasture days for good blue grass. Sweet Clover is very high in mineral content, especially of calcium and so is particularly valuable for dairy cattle and young stock and it always increases the milk flow. The white variety is best for pasture, as it stays green longer, having a later maturing season.

Cattle eat, and in fact relish, Sweet Clover even though some contend otherwise. The secret of success is to turn the cattle in early, when the stand is from six to eight inches high and the plants succulent and tender. If forced to eat Sweet Clover, cattle will eventually develop a decided preference for it.

First-year Sweet Clover will furnish an abundance of fall pasturage when other fields are furnishing very little feed. During the first year grazing can start when the plants are about six inches high, although the less it is grazed the first year the better will be the grazing in the second year. If weeds are bad, sometimes Sweet Clover must be cut during August. When this becomes necessary, the cutter bar should be set quite high, for there is no further growth of the main shoot after it has been cut, and dependence must be placed upon the lateral branches for pasturage or hay.

Second Year Pasturage

The second year, Sweet Clover makes a quick, early growth and may be pastured earlier than any other plant. If it is grazed reasonably close, there will be a constant supply of small tender shoots. If this is not done, second-year Sweet Clover will get coarse, bloom, form seed and die in early August, while if



it is kept pastured closely it may be made to furnish succulent pasture for a much longer period.

Even if a seed or hay crop is wanted, pasturing may continue until the middle of June, as grazing really benefits the stand by causing the plants to stool and make a larger number of branches.

Recent trials, at the Ohio Station, with Sweet Clover as a pasture for sheep, showed that the second-year pasture has an unusually high carrying capacity for a limited time. A two-acre plot with a medium to good stand furnished 81 grazing days to 51 head of yearling Shropshire and Merino ewes.

The Ohio Station is attempting to breed a late maturing Sweet Clover that will have a longer pasturing season the second year. These strains promise to prolong the pasturing season one to three weeks beyond that secured from the common varieties. This extra pasturage would come at a critical time when bluegrass usually produces little or no grazing and green feed is at a premium.

**Renovating
Old Pastures** Old pastures are often successfully improved by disking in the fall and sowing a few pounds of Sweet Clover during the winter. The unhulled seed can be well utilized for this purpose. Not only is the amount of pasturage increased, but the grasses will be improved, owing to the addition of humus and nitrogen furnished by the Sweet Clover. The same plan may be followed in the spring, but not as successfully. At this time the seed should be drilled in. The Wisconsin Station has been quite successful in burning bluegrass pastures in the spring and then sowing in Sweet Clover.

For Hay

The best Sweet Clover hay is made in the fall of the year sown. This hay will be the equal of alfalfa in composition, palatability and feeding value and usually



superior in protein content. It is cured about the same as alfalfa or red clover except that, being quite succulent, more time is required for drying.

Second-year Sweet Clover is not well suited for hay, as the growth becomes coarse and woody as it goes into bloom. Experiment Stations agree that Sweet Clover is too valuable for green manure or pasture the second year to use for making hay which at best will not be of very good quality. If a hay crop is harvested, the plants should be cut high enough to leave on the stubble, a sufficient number of buds and young branches, as growth starts only from these.

Occasional cases of poisoning have occurred in feeding Sweet Clover hay. Some investigators believe that only spoiled hay is dangerous, while others believe that any of the hay will cause poisoning if fed continuously in large amounts. Apparently, there is little if any danger if other kinds of hay are used alternately with the Sweet Clover hay in one to two-week intervals.

Soil Requirements and Preparation

Where It Will Grow Almost the only limiting factor to the growing of Sweet Clover is the absence of lime. Lime is as necessary for Sweet Clover as for alfalfa and on poor land phosphate should be added. Observation of Sweet Clover, in places where it grows naturally, indicates what is necessary to be sure of a good stand. Organic matter or humus may not be present, but these spots contain lime and the ground is hard, which indicates that a firm seed bed should be prepared and lime applied if the soil is acid. If the soil is sweet, this plant will grow in water-logged soils nearly as well as alsike and far better than alfalfa or red clover.



Sweet Clover must be inoculated if good results are to be had, and the lack of this accounts for many failures. Even though it is sown in winter, the seed should be inoculated, as freezing weather will not injure the bacteria, nor will the sun's rays interfere, because enough of the bacteria will stick to the under side when the seed is sown on top of the ground.

Seeding

Kinds of Seed

To appreciate the proper Sweet Clover seeding practices it is necessary to understand that this seed is available in three different forms, namely: *Unhulled seed*—just as it comes from the thresher with the outside hulls or burrs still on it; ordinary *hulled seed*; and *scarified seed*, which is seed from which the hulls have been removed and which besides has been specially treated to scratch or break the hard seed coat. The hulled seed is often called *unscarified* to distinguish it from the hulled seed which has been scarified.

Most Sweet Clover seed has a very hard layer which is impervious to water until it is broken. Therefore, for late spring and summer seeding it is necessary to use the "scarified" seed to insure germination. Ignorance of this fact has resulted in many Sweet Clover failures.

Although sowing this "scarified" seed in spring grains has been generally satisfactory, this has not always been the case when sowing Sweet Clover on honeycombed wheat ground as red clover is sown. A period of unusually early warm, moist weather may cause many seeds to sprout. A later drop in temperature to below freezing may kill many of the sprouted seeds. When seeding is delayed until a drill can be used, the seed frequently is not covered, the surface soil may become too dry for the seed to sprout, and if it does start, the wheat has made such a growth as to offer serious competition.



**When
to Seed**

To overcome this difficulty, experiments have been conducted which prove the advisability of sowing either unhulled or possibly unscarified seed at the time the grain is drilled in the fall, or later during winter and early spring.

By doing this the action of freezing and thawing buries the seed and gradually breaks the hard seed coat. In this way the seed is ready to sprout with the first warm weather, which is important, as the seedlings grow best in cool, moist weather. After the ground has thawed, only "scarified" seed should be sown.

Spring seeding with small grain has proven quite successful. Early oats or barley is better than late oats, as they do not shade the clover as much. Seeding alone should not be practiced in spring unless it is known from previous experience that weeds will not smother it. As explained before, the seed should always be sown on a well prepared, firm seed bed.

In summer Sweet Clover may be seeded alone or in corn. Sometimes it is sown as late as August 15. On the whole, summer seeding is not very favorable, as the crop will not amount to very much during a dry season, although remarkable growths have sometimes been made during wet seasons. At this time the scarified seed should be sown.

**In
Mixtures**

Sometimes alsike, alfalfa or timothy is seeded with Sweet Clover. Alsike and timothy are useful on land which is not uniformly sweet, as these will occupy the spots where Sweet Clover fails. Four or five pounds of alsike and a little timothy is the usual acre seeding.

For permanent pastures, 4 pounds of bluegrass, 6 pounds of timothy and 8 pounds of Sweet Clover makes a good seeding. As the Sweet Clover dies out there will be a surprising growth of the grasses.



Moisture Requirement

Sweet Clover will not respond to moisture as quickly as red clover, as more moisture is needed for germination even when the seed has been scarified. For this reason growers are sometimes surprised to find that they have a poor stand of Sweet Clover while in a neighboring field sown with red clover at the same time, the growth has been entirely satisfactory. A lack of moisture just at the time of germination, or immediately after the young sprout is appearing, seems to affect Sweet Clover more seriously than any other clover. However, there is a very small percentage of failures in the seeding of Sweet Clover.

Harvesting and Threshing

Hay

As explained before only first-year Sweet Clover should be made into hay. This can be cut about the time growth ceases, which is usually in late September. Shortly before this time, numerous large buds are formed at the crown of the plant and these produce the next year's crop. After these are well formed the plants are ready for winter, and cutting of the year's growth will not kill them. It is not necessary to leave more than ordinary stubble when cutting a hay crop in fall of the first year. It is best to rake the hay into windrows after the plants are well wilted or put into very small cocks to complete the drying.

Seed Crop

When a seed crop is to be harvested, Sweet Clover should be pastured for a time during the second year, possibly until the middle of June. This will allow time for the seed to mature and at the same time keep the growth from getting too large.

The crop should be cut for seed when about three-fourths of the pods have turned dark, and only when damp from



dew or rain, as the seeds shatter easily. When cut with a mower the swath should not be run over.

The mower is not as satisfactory for cutting Sweet Clover for seed as the binder, because with the former too much handling is necessary. The self-rake reaper is best, but a binder can be equipped at small expense for handling the clover economically and with small loss of seed.

Corn harvesters are sometimes used if the growth becomes too large to be cut with a binder. If the stand has been cut for hay or pastured, the plants are smaller and are harvested more easily, so in this case a binder works nicely. This facilitates handling and makes it possible to use a huller, otherwise it is sometimes necessary first to thresh the coarse straw and then to run the seed through the huller.

Varieties of Sweet Clover

WHITE BIENNIAL—the most common variety. It has a strong root development and a leafy growth much like alfalfa in appearance. During the first year it often grows over two feet in height and usually approaches five to eight feet during the second year. As its growing season is two or three weeks longer than the yellow, it produces a larger top growth and so is preferred for hay the first year. It is also better for pasture, as it gives more grazing days.

YELLOW BIENNIAL—produces a smaller growth than the white. Its stems are finer and more branching and so it makes better hay the second year. It matures two weeks earlier and the seed is more easily harvested because of the smaller and shorter stems.

GRUNDY COUNTY—a variety of the biennial white sweet which probably is raised chiefly because it is easy to secure good yields of seed from it. It resembles the yellow variety in this respect and also in that it should not be sown for hay the first year or pasture the second, because of a small top growth and early maturity.

HUBAM—an annual variety of Sweet Clover. Used mostly by bee-keepers.



ALFALFA

Another high ranking legume of prime importance to the dairyman. Alfalfa is a large yielder and will grow under wide soil and climatic conditions. Buy seed carefully—avoid all imported seed as well as unadapted native varieties.

TO get and maintain a stand of Alfalfa it is necessary to manure, lime, kill weeds, provide good drainage, sow adapted seed. This latter is most necessary and many failures attributed to other causes are really due to sowing varieties not winter hardy.

The federal seed staining laws protect you against unadapted imported seed. No such laws protect you against unadapted domestic seed, so even in purchasing American Alfalfa it is well to know in what state the seed was produced.

Established Alfalfa plants can hold their own against weeds, but young plants are sometimes smothered out by an aggressive stand of them. It is therefore necessary that you sow seed free from weeds, especially dodder and buck-horn, which cannot be removed from Alfalfa except by special machinery. The cost of preparing the land is the same whether good or poor seed is sown and the difference in the cost of the best and poor seed would never be over seventy-five cents or a dollar per acre. But, if the cheaper seed is sown, it may result in a total failure or at least reduce the value of the crop and raise the cost of harvest.



Utilizing Alfalfa

Whenever Alfalfa is raised it is possible to feed a balanced ration without buying the high priced concentrated feeds. Alfalfa will furnish the necessary amount of protein, the element which to a large extent determines the amount of beef and milk a given feed will produce. An average acre of this legume will furnish six times as much digestible protein as timothy and twice as much as red clover. As a general rule Alfalfa is more valuable for hay than for pasture. Sometimes it is successfully used as a forage crop, as it is more or less permanent. It withstands pasturing fairly well, if not grazed too early in the spring nor too late in fall.

For soil improvement Alfalfa ranks high, as it is an excellent nitrogen gatherer and its deep roots will loosen the soil.

Alfalfa is useful in eradicating some of our worst weeds. Patches of Canada Thistle and Wild Morning Glory may be choked out with a thick stand. The Alfalfa makes a quicker start in the spring, and after cutting, than do these weeds, which is the main reason for its success as a weed eradicator.

Soil Requirements and Preparation

Feed Your Soil

The point has been well made that "growing Alfalfa is often a choice between buying feeds for soil or buying feeds for livestock." Find out what your soil needs in the way of plant food by sending a sample to your experiment station. Well rotted manure is generally the best conditioner, and superphosphate is usually necessary. If the seed is inoculated, the plants will gather their own



nitrogen from the air, and store some of this in their roots. Inoculation always encourages a more vigorous growth. Lime must be used on an acid soil. Lack of this has caused thousands of Alfalfa failures and so it does not pay to take a chance. The best Alfalfa soils are those with good surface and underground drainage.

Need of Lime

There is nearly twice the amount of lime in the ash of Alfalfa as there is in the ash of red clover, and seven times that in timothy. Lime is necessary for all legumes and especially so for Alfalfa. Of the three forms of lime, the one most economical in your section should be used. Fifty-six pounds of burnt lime or 74 pounds of hydrated lime is equivalent to 100 pounds of ground limestone. Probably not less than two tons of ground limestone per acre should be used, and more will not hurt. It is best to apply lime as long before sowing as possible, even a year in advance.

Drainage

All plants require air in contact with the roots. If there is too much water in the soil, the air is reduced and root development retarded. A lesser top growth follows. Drainage takes off surplus water and admits air, causing circulation. Almost any wet soil, if properly drained, will raise Alfalfa. The tile should be put in as deep as may be practicable.

Winter Killing

Good drainage and plenty of humus is the best insurance against winter killing. Late summer seeding should be avoided as well as late fall cutting and pasturing. A new stand of hardy Alfalfa will generally weather the worst of winters, even when the old stands of the same strain are practically killed out. Because of this, new seedings of Alfalfa as a part of the regular farm rotation have become a method of reducing the loss from winter killing.

**Seed
Bed**

Alfalfa wants a firm but well prepared seed bed with the surface lumps broken up. Fall plowing is advisable, especially with the heavier soils, as it gives the land time to settle, and makes it possible to apply lime during winter. A cultivated crop, such as corn, should be grown on the land the preceding season, if possible, to avoid weed trouble and also interference by grasses. If this has been done, it is not necessary to plow before seeding.

**Nitrogen
Bacteria**

Inoculation increases the yield of this legume, and also increases the protein content of the forage. The Illinois Station found that, as an average, 70 pounds of protein was added to a ton of hay by inoculating the seed. Inoculation will not only insure a greater yield, but it will also increase the chances for a good stand, and store a large quantity of nitrogen in the roots at no expense. The cost is very small and the returns large.

Seeding

**When
to Seed**

In sections having approximately the same climate as Ohio, Alfalfa may be seeded in early spring or mid-summer. Spring seedings are practically always made with a nurse crop, such as barley or early oats, about the last of April or the first of May. The grain may be cut for hay or allowed to mature if there is no danger of smothering the young Alfalfa plants. Although summer seeding has been quite popular in the past, in some sections spring seeding is much better because of the dry condition of soils in late summer. Summer seedings do not require a nurse crop, but the ground should be put through a careful weed-killing cultivation. Early July seems the surest planting time. Sometimes Alfalfa is seeded in corn at the last cultivation. This practice is not generally recommended because it so often results in complete failure.



Seeding

The amount of Alfalfa seed required per acre varies according to the fertility of the soil, quality of the seed, and method of planting. The usual seeding is twelve to fifteen pounds per acre. Alfalfa seed should be sown shallow. On heavy soils it is sometimes best to broadcast the seed and then cover it by a light rolling or harrowing. Drilled seed should be harrowed lightly to smooth out furrows left by the drill, as otherwise a heavy rain may bury the plants.

Harvesting

When to Cut

In spite of the fact that the advice has always been to cut Alfalfa when the little shoots start, this is probably not the best indicator. Instead, it would seem that the best stage to cut Alfalfa is when the vegetative growth slows up, which ordinarily occurs just before full bloom. At this time there is usually a slight yellowing of the field.

The number of cuttings per year will depend upon climatic factors, but experiments at the Ohio State University Farm indicate three cuttings as best for all except possibly northern latitudes. This rate of cutting gave more hay of a better quality, and strengthened the stand against winter-killing.

Curing the Hay

The leaves of Alfalfa contain about twice as much protein as the stems and in the bud stage this is around twenty-eight per cent. Because of this, in making hay, every effort should be exerted to save the leaves. The greatest quantity of hay is harvested during the third or fourth season, as after this weeds, grass, etc., weaken the stand and the yield decreases.



Alfalfa should be raked into windrows and then put into cocks until after the leaves have wilted and the hay cured. A heavy crop may be tedded. The crop may be stacked or mowed while the stems are quite tough or flexible. Of course, any kind of hay, including Alfalfa, should not be exposed to the hot sun any longer than necessary. Too long exposure bleaches the leaves of Alfalfa and causes them to become brittle and fall off. Moreover, if the leaves have been burnt by the sun, they will not evaporate the water from the stems, and the hay will cure slowly and unevenly. Curing through the action of air and wind is best; therefore, Alfalfa should be cured in cocks, rather than in the swath.

We pay the Freight. See page 71.

March 19, 1930.

"Received the seed the 18th. The seed is the best I ever bought. Can't find any dirt or weed seed in it."

LLOYD BRADLEY,
Geneva, Crawford County, Pa.

July 23, 1930.

"We just cut our Grimm Alfalfa the second time and we shall have some nice hay very free from weeds. Last week we sowed six more acres of Grimm, which is sprouting fine.

"We shall have to cut the alfalfa three times this year from the looks, as we had 6 inches of rain in June and about 5 inches in July and a fine rain on top of the new seeding. Only thirty days between cuttings—if it is not right to cut before September 15th shall not cut.

"Your seed has been very satisfactory and the neighbors are trying out my surplus seed."

EDWARDS O. DAVIS,
244 Oak Street,
Indian Orchard, Hampden County, Mass.



GRIMM ALFALFA

We Guarantee Our Grimm Not to Winter Kill

BACK in 1919 we adopted the policy of guaranteeing our Grimm Alfalfa not to winter-kill. This is the eleventh time we have renewed this guarantee and we are glad to do it, as our confidence in genuine Grimm is just as firm as ever. This warranty is designed to give growers the necessary confidence, not only in our Grimm, but in the Grimm strain of Alfalfa as a safe and profitable crop.

Our Guarantee

To guarantee that the seed will produce a satisfactory growth is hardly possible, because too many things can happen before the Alfalfa becomes established. However, if seed is sown early enough so that a growth of six to eight inches is realized, before the plants become dormant, we will willingly and cheerfully replace the seed if the plants do not carry through the first winter.

Grimm Alfalfa must, of course, be planted on ground where drainage and other conditions are favorable. Owing to the fact that dry weather may delay germination, so that the crop would not get a good start before winter, we believe that north of the Ohio river Alfalfa should not be planted later than August 1, and cannot guarantee it if planted later.

Winter Killing

The proof of genuineness is hardiness. This is the only positive proof. Grimm seems to be more drought resistant than ordinary Alfalfa and many farmers believe that on an average Grimm will produce more hay than any other strain. This contention has been proven by experiments at the Ohio station. Different winter conditions cause Alfalfa to kill. A rainy fall prevents the plants from becoming dormant early so that the plants are not sufficiently prepared for winter. Alternate



freezing and thawing in clay or in humus-poor soil will break off the roots. Sheet ice sometimes kills Alfalfa. Grimm Alfalfa has the qualifications that enable it to withstand these conditions better than any other variety.

Reasons for Hardiness

It is not known just why Grimm is more hardy than any other Alfalfa. No doubt this is due in part to the presence of yellow flowered Alfalfa in its ancestry and also to the process of natural selection which took place under the severe climatic conditions to which it was subjected for a long period of years in Minnesota. It was in this state that the seed was introduced from Germany by Wendelin Grimm in 1857. Another reason for its hardiness is its low set crown, which affords protection to the most tender part of the plant.

Identifying

It is very difficult to distinguish Grimm from other Alfalfa. The seeds of both are almost exactly alike. There is not much difference between the plants except that there is a greater diversity of forms, upright and decumbent individuals often occurring side by side. When in full bloom Grimm shows a higher percentage of mixed or variegated flowers. Even though some contend otherwise, Grimm does not have a much more branching root system than ordinary Alfalfa, so it is impossible to identify Grimm in this manner. The seed of Grimm Alfalfa has a definite market value like any other standard seed, and so Grimm at a very low price could not be true to name and would be an unwise buy.

Danger of Weeds

In seed producing sections Grimm is grown for seed almost exclusively, owing to the extra price which the seed brings. The weeds in an Alfalfa field tend to increase more rapidly when the stand is allowed to remain for seed each year than when the field is mown regularly for hay. For this reason Grimm seed should be purchased carefully.



THE TRUE CLOVERS

Always in demand, but seed crop again short after a normal crop in 1929. We offer only native seed. It always repays to buy clover seed from reliable sources. You can rely on Scott's Clovers.

Red Clover

IN former years Red Clover was considered the cornerstone of a permanent system in agriculture. However, of late, failures with it have become quite common and so the crop is losing some of its importance.

Last year there was a plentiful supply of Ohio, Indiana, and Michigan-grown Red Clover, which seed has proven to be the hardiest and freest from disease of any seed. While there was not nearly as large a production of this seed in 1930, we will be able to supply it to our trade.

Why Does Red Clover Fail?

Authorities tell us Red Clover fails because our soils are less fertile than formerly, and that they are also acid. These soil conditions may be improved. Most soils need lime and phosphate. In some cases there is a deficiency of humus and organic matter, which with poor drainage, results in winter-killing. Find out what your soil needs before attempting to raise Red Clover. Sometimes, on poor soils, plowing under a heavy green manure crop, such as sweet clover or soybeans, will pave the way for Red Clover. A top dressing of farm manure is very effective, especially on soils well supplied with lime. Inoculation is beneficial, as this will introduce the proper bacteria so the plants can gather nitrogen from the air.



Sowing unadapted seed has been the cause of many Red Clover failures. Most of the imported seed is unsafe, as is that grown in some of our western states. Oregon-grown seed has proven to be entirely unfit for use in the central and eastern states; in fact, it is no more desirable than the Italian seed.

Diseases have played havoc with Red Clover in some sections. Anthracnose has been especially destructive throughout West Virginia, Kentucky, Maryland, Tennessee and Virginia.

Cultural Practices

Best results are usually obtained from spring sowing, and for greatest germination the seed should be drilled in. In some sections of the country, where spring sowing fails, late summer seeding has proved advisable. This is especially true south of the Ohio River. The plants escape the hot, dry midsummer, which often kills or weakens them.

It is often the practice to cut Red Clover too late. If the blooms begin to ripen the plant is injured. If cut when just in bloom, the second crop will be heavier, there will be no danger of harming the plants, and the hay will be more palatable. Red Clover hay will not stand as much moisture as either alfalfa or soybeans. Thus it pays to cure it and get it into the mow or stack as soon as possible. If cut in the afternoon when the plants contain less moisture, the hay can be tedded the next morning, windrowed, shocked and put into the mow the same day.

Red Clover matures about the same time as some of the worst weeds, as, for instance, Buckhorn, Wild Carrot, Sorrel and Dodder. For this reason it is very difficult to find Red Clover free from weeds.

We give special attention to Red Clover, because we sell more of it than of any other seed. It has always been our policy to supply seed as free from weed seeds and waste matter as it is possible to furnish.



Mammoth Clover

Warranted True to Name

This clover, also called English, Sapling, and Pea Vine Clover, like red, is a biennial; but, where soil and climate are particularly favorable, or where prevented from producing seed, it is likely to show a perennial tendency.

The very heavy growth usually smothers out most of the weeds and as a result we can always furnish Mammoth that is free from weed seeds. This clover is supposed to be less subject to diseases than red clover.

For Hay and Seed

On poor soils Mammoth makes more desirable hay than on good soils, because the growth is not so rank. It is especially superior to red clover on sandy soils, and excels it as a green manure crop on account of the large growth. Mammoth makes hay about three weeks later than red, so it is much better for sowing with timothy or red top, as red clover is overripe at the proper time for harvesting either of these. While the hay is coarser than red clover, it has the advantage of ripening later in the summer when there is less danger of rain.

If a seed crop is to be harvested, the clover may be pastured until about the first of June. However, if the season is especially dry, care must be used in pasturing, as the plants may not make enough after-growth to produce a large seed crop. On very poor soils it may be advisable not to pasture at all. Instead of pasturing Mammoth, some roll it just when it is starting to head. This keeps down the heavy growth and makes the seed crop a little earlier. Sometimes fields are clipped, but this must be done quite early, and not too close to the ground. No attempt should be made to take up the hay. Mammoth makes a much surer crop of seed than red, and matures about three weeks earlier.

An advantage of Mammoth over red clover is that the seed crop of the former is made between the first and second bloom of medium red and for that reason usually escapes the attacks of flies and insects.



Identifying the Seed

The seeds of Mammoth and red clover are so nearly alike that they cannot be distinguished. This likeness has resulted in much annoyance for the grower. We formerly received dozens of letters each year asking how we knew our Mammoth was true to name, most of the writers stating that they had more than once sowed Mammoth, only to reap a crop of red.

This seemed to be the common experience all over the country. For this reason we guarantee the genuineness of any Mammoth Clover seed purchased from us, and will refund the full purchase price of any which does not prove to be genuine.

Alsike

At one time Alsike was thought to be a hybrid between white and red clover on account of its appearance and habit of growth. Now, however, it is considered to be a distinct species.

While not strictly a perennial, Alsike usually remains in the ground for several years, as enough of the heads escape mowing and the grazing of stock to do much toward reseeding. It is particularly adapted to wet soils, sometimes doing well in standing water. Alsike will grow much better on acid soils than red clover and will also resist winter-killing to a greater extent.

The diseases that attack red clover do not affect it at all.

Alsike gathers nitrogen from the air the same as red clover and other legumes, and would be as valuable in the rotation as a soil builder except for its smaller root and stem growth.



In Hay Mixtures

For growing with timothy, Alsike is preferred by some to red clover, their contention being that these two ripen together and the timothy is not crowded by Alsike, as it is by red clover. However, many growers claim that Alsike is ready for hay three weeks before the timothy and so the two should not be grown together. Quite often it is sown with red clover, since it interferes but little with the growth of the latter, and should the red clover fail to grow, or be killed, the Alsike will probably take its place. The spreading roots of Alsike will keep red clover from "heaving." As there are 700,000 Alsike seeds to a pound, and 250,000 in a pound of red clover, it takes much less of the former to sow an acre, and less Alsike should be used when the two are to be sown together. Alsike is also a desirable mixture with alfalfa on doubtful soils to insure against failure.

Quite often we have Alsike seed with timothy or white clover in it which we can sell at a special price.

Except where grown for seed, it is usually best to sow some other seed with Alsike, such as timothy, orchard grass, red clover, or bluegrass. A good hay mixture is three parts timothy, two parts red clover, and one part Alsike. South of the Ohio river, alsike, redtop and orchard grass make a desirable mixture for a semi-permanent pasture. As the seed is so small, it should be covered lightly, and 6 to 8 pounds per acre is sufficient.

Avoid Weedy Seed

Probably because of acid soil, Canada Thistle, Sorrel and Buckhorn infest many of the sections where Alsike is raised for seed, so it is well to look for these weeds when testing samples. They cannot be entirely removed in cleaning, as many of them are the same size as Alsike. This is especially true of Canada Thistle.

Owing to its smaller size, Alsike is hard to clean, but by using care in buying we are always able to furnish seed that is practically weedless.



Crimson Clover

Crimson Clover is said to be a native of southern Europe. It was introduced into Chester County, Pennsylvania, in 1820, but its distribution was quite limited until 1880. Crimson Clover is a winter annual, that is, being sown in late summer, it goes through the winter in a green state, matures its seed and dies in the spring. It will seldom withstand the winters north of the 40th parallel. The fact that it is imported would indicate that the seed generally contains a lot of noxious weeds. This is usually the case and so a careful examination should be made before buying. Use our test.

White Clover

White Clover is usually called White Dutch to distinguish it from white sweet clover. As it grows almost anywhere, everyone is thoroughly familiar with it. Many alsike fields contain White Clover, and when the seed is harvested the two cannot be separated. Sometimes we have this mixed seed at prices lower than when the two seeds are bought separately.

Japan Clover

For years Japan Clover, or Lespedeza, has proven itself a valuable plant in the South. Its possibilities in the northern states are being realized, as now it is grown in southern Pennsylvania, Ohio, Indiana and New Jersey. It will grow on almost any type of soil, and even thrives on dry hillsides and acid soils.

Lespedeza is an annual and far enough south will reseed itself if not grazed too closely. It is used mostly as a pasture crop, since it will renew old, thin pastures and affords a good forage during July and August when other feed is scarce.



Early spring sowing is the best in a winter grain or with some other nurse crop, or it can be sown in mixtures. If seeded alone, about 25 pounds per acre should be used. The seed comes unhulled and ordinarily contains considerable waste matter. Its use north of the Ohio River is not recommended except in a small amount on permanent pastures.

Korean Lespedeza

Korean is a new variety of Japan introduced into this country about 1922. As it matures somewhat earlier than the common variety, it has shown promise of use further north.

Its behavior so far has been rather erratic. In some localities it reseeds in pastures and makes good hay. Some report good results with it on their acid soils, but it seems no better than common Japan where this will reseed itself.

February 17, 1930.

"The seed came thru in 10 days. If it were not for the fact that your seed is never good nor better, but always best, I truly could toss you a bouquet for the fine seed in this shipment. I keep telling my neighbors about your fine seed, but probably they think I am no judge or they may possibly think weeds are an advantage.

"Still, if all the farmers east of the Mississippi realized the advantage in using your seed you could not supply the half of them."

E. W. HEATWOLE,

R. No. 4, Harrisonburg, Rockingham County, Virginia.

February 18, 1930.

"Seed arrived in O. K. shape. I have been buying seed for 40 years and have made it my aim to buy the best grade possible. Your seed surely is well cleaned and fine quality. Thanks for prompt and fair dealing."

C. A. STEVENSON,

Canal Winchester, Franklin County, Ohio.



OTHER LEGUMES

Hairy Vetch

We Supply Home Grown Vetch Only

Of the many kinds of Vetch, but two are of agricultural importance in this country, namely, Hairy Vetch and Common Vetch. In the latter there are both winter and spring strains, but only the spring strain is used, except in the states south of Tennessee. This spring Vetch is an annual and it is used very little except on the Pacific Coast.

Russian and Sand are other names for Hairy Vetch, a winter annual, which is our best leguminous winter cover crop. It lives through the most severe winters, thrives well in sandy soil, and withstands drought better than other legumes. When inoculated, the plant is an excellent nitrogen gatherer. In feeding value, as hay or pasture, it is equal to red clover.

Cultivation

It is advisable to sow a little grain with Vetch to support the weak-stemmed vines, as they grow better off the ground. Rye is usually seeded with it, using a grain drill and sowing 20 to 30 pounds of Vetch with 3 to 5 pecks of rye. The more Vetch seed used, the greater will be the soil improvement. The seed should be sown in August or early September in Ohio, or later further south, or it may be seeded alone in the spring for pasture or with oats or barley. In either case it will make an excellent summer pasture.



Harvesting

The hay is easily cut with a mowing machine or pea harvester. If it is to be stored, the crop should be cut when the pods are about half formed, as then it can be easily and quickly cured. Sometimes the crop is fed green, and if this is to be done, it should be cut when the plants are in full bloom. It may be grazed for a short period in spring without reducing the hay crop a great deal. Domestic Hairy Vetch has a higher percentage of germination than the imported and is usually weed free.

Canada Field Peas

Field Peas are usually spoken of as Canada Field Peas, the name having been given when the plant was comparatively unknown and the seed mainly imported from Canada. However, only a few varieties originated in that country.

Being a legume, the crop is a soil improver and furnishes a ration rich in protein. The peas can be sown for soiling and fodder and for green manure. They are usually sown with oats, about one bushel of each, thoroughly mixed, per acre. This combination makes a very desirable hay or soiling crop, the yield being quite large.

Unlike cowpeas, they should be sown as early as possible in the spring, and do best farther north than Central Ohio.

One bushel of Field Peas, one bushel of oats, four pounds of dwarf Essex rape, and eight pounds of sweet clover make excellent hog pasture that can be sown in the spring, the pigs being turned in when the oats and peas are about eight inches high. The clover may be omitted. Inoculate Field Peas for best results.



HAY AND PASTURE GRASSES

Timothy

Timothy was first brought into this country from England by Timothy Hanson, of Maryland, in 1720. It is distinctly a grass for hay rather than pasture, as it does not take kindly to trampling and close grazing. It is our hardiest and best known grass and is a part of all mixtures.

The facts concerning seeding, harvesting, etc., are so well known that it is unnecessary to enumerate them.

Often Timothy seed contains a considerable amount of sorrel owing to the fact that both grow on acid soil. It is well to be on the lookout for this and also for Canada thistle, which is not easy to identify in Timothy seed. In Timothy seed you will nearly always find a small amount of Alsike, and quite often grasshopper specks. It is not possible to remove entirely either of these, and while they hurt the looks of seed, they make no difference in the quality, and should not be confused with black plantain, which is somewhat triangular and flat.

One peck is the amount usually sown per acre, or if clover is to be sown in the spring, a bushel to six acres. A satisfactory mixture is 6 pounds Timothy, 4 pounds red and 2 pounds alsike.

Kentucky Bluegrass

This variety of grass is native both to Europe and to North America, and shares with two or three other similar species the rank of greatest American pasture grass. Authorities are of the opinion that it is grown more or less in every state of the Union. It makes the best sod of any of our grasses and does fairly well on a wide range of soils,



although better adapted to clay than to sandy loam. It is a very nutritious pasture grass, but has little value for hay. The fact that it is both an early spring and late fall grower makes it valuable for grazing at both ends of the season. Kentucky Blue Grass should constitute a part of practically every lawn and pasture mixture.

Orchard Grass

Orchard Grass, known as Cocksfoot in England, is a native of Europe. Its American name is due to the fact that it is successfully grown in partially shaded places.

This grass will stand more drought than Kentucky bluegrass, but it is not especially adapted to dry land conditions. It starts very early in the spring and grows rapidly so that it is valuable in a pasture mixture. It does not permit an even sod, as it is inclined to grow in tufts or bunches. Although of high nutritive value, Orchard Grass is not relished by stock as much as bluegrass or redtop. It thrives best on rich, well-drained loam, and makes a good growth in shady places. Twenty-eight pounds is the amount usually sown per acre.

Our test should be used, as it is seldom possible to get Orchard Grass that does not contain a considerable amount of dock and sorrel and quite often buckhorn, all noxious weeds.

Redtop

Redtop belongs to a family of grasses that is very widely distributed over the globe. It is a perennial which ranges in growth from a few inches to three or four feet according to the conditions of soil and climate. Growth starts later in the spring than Kentucky bluegrass, is slower and maturity is later. Redtop is valuable for pasture and hay, but does not equal timothy for the latter. While adapted to a great variety of soils it does especially well on wet bottoms and should always be included in mixtures for such land.

About 15 pounds of clean Redtop should be sown per acre.



Miscellaneous Grasses

Besides the grasses already mentioned, we are able to offer such varieties as are in general demand: Meadow Fescue, Canada Blue Grass, Rye Grass, and all imported fancy grasses.

Pasture Mixtures

A mixture gives a longer period for grazing, furnishes a greater variety, yields a crop richer in protein, and makes a better balanced ration, than would the grasses composing the mixture if sown separately. But it does not pay to sow in a mixture any grass that will not do well alone.

In choosing the grasses to go into the mixture such varieties should be selected that the good qualities of one will balance points in which the other is deficient. For example, the grass that forms roots on the surface is not desirable from the standpoint of fertility; another may send its roots fairly deep, but not be as suitable for pasture grass as the other. The two make a combination well adapted to grazing and maintaining fertility. Pasture mixture grasses should be selected with respect to their periods of growth so that grazing may be done through the longest possible period.

A small amount of various clovers should be included in a Pasture Mixture, as legumes not only feed the grasses by pumping plant food from great depths to the surface, but also supply them with nitrogen drawn from the air, and, no doubt, greatly increase the protein content of the grasses. A small amount of alfalfa will do much towards getting the soil inoculated. White clover will grow where nothing else will and alsike does well in wet places. Due consideration must be given to the fact that the kinds of grasses that should be used depend upon the locality. Even in a single field, parts will be found that are adapted to grasses that will not thrive in the rest of the field. Sow 20 to 50 pounds per acre.



Annual Pasture Mixtures

In some seasons it becomes necessary to plant annual pastures if permanent pastures are short, as will probably be the case in 1931. Many crops can be utilized for this purpose, including practically all grains. For spring planting Oats can be planted with Canada Field Peas, Sweet Clover, Timothy, or Alsike, etc. Barley is also used for spring planting and Rye for fall planting. Dwarf Essex Rape can be planted in May or Sudan Grass in June for summer pasture and of course Soybeans make wonderful hog, sheep or cattle pasture.

The following mixtures are suggested:

- No. 1 4 pecks Oats, 4 lbs. Rape, 5 lbs. Spring Vetch.
Drill oats first, broadcast rape and vetch, cover with harrow and cultipacker.
- No. 2 4 pecks Oats, 5 lbs. Spring Vetch, 10 lbs. Sweet Clover. A good cattle pasture. Seed as above.
- No. 3 8 pecks Oats, 4 pecks Field Peas.
- No. 4 4 pecks Oats, 3 pecks Barley, 3 pecks Rye.
- No. 5 6 pecks Oats, 5 lbs. Sweet Clover, 6 lbs. Timothy
5 lbs. Alsike.

Meadow Mixtures

In contrast to pasture mixtures, meadow mixtures should contain grasses that mature at about the same date.

For reasons already stated it is more profitable to sow a mixture of several grasses, including clovers, for hay rather than to sow one kind alone, for then the roots fully occupy the ground to a considerable depth, each variety getting its food from a different level, the legumes acting as feeders for the grasses.

We will be glad to suggest meadow or pasture mixtures for special soil and climatic conditions.



FORAGE AND CATCH CROPS

Sudan Grass

Sudan Grass is a quick-growing annual which is becoming increasingly popular because it will thrive on almost any kind of ground, will withstand drought, and gives abundant yields. Throughout the corn belt it is probably the most desirable catch crop of the grass family, as it makes good hay, pasture, ensilage and a soiling crop. Its feed value is fully equal to that of timothy and it is relished by all stock.

The usual seeding time is from two weeks after corn planting until the first week in July. For hay or pasture the seed may be broadcasted or drilled at the rate of 15 to 20 pounds per acre. Two crops of hay can sometimes be cut, the first one about sixty to eighty days after seeding, as the first heads appear, and the second forty-five days later. This hay is easily cured in cocks.

As a pasture plant Sudan furnishes plenty of green, rich forage during dry weather. It can be grazed as soon as the plants are two feet high, and if practicable the field may be divided in half and pastured alternately. An acre should support one to three cows for two or three months.

Sudan grass belongs to the Sorghum family and so at times it may show a trace of a form of prussic acid. This seldom shows, however, except after a long period of drought or after the growth of the plant has been arrested for some time. It would probably be best to avoid pasturing after frost.



The Millets

The term Millet takes in a large group of quick growing annual forage grasses. The Foxtail group is most extensively used and cultivated in America and consists of the Golden, Hungarian and Common varieties.

Golden Millet, sometimes called German, is most largely used, especially in the West, and most of the seed comes from that section. Sow 35 to 50 pounds per acre about two or three weeks after corn planting up until mid-summer. The best Millet is cultivated for seed in Tennessee.

Hungarian Millet is smaller and matures earlier than the Golden. The hay is somewhat more desirable, as it does not get as coarse. Seed the same as Golden.

Dwarf Essex Rape

Dwarf Essex Rape is valuable as pasture for cattle, sheep and for hogs especially. It grows from one and one-half to four feet high and lasts longer in fall than other pasture crops. The cost of sowing is small, as only 4 or 5 pounds per acre are required. In the north it may be sown anytime from early spring to mid-summer.

If seeded about May 1st will be ready for pasture about July 1st. Usually seeded in 24-inch rows, and cultivated. Requires rich land and plenty of lime.

December 26, 1929.

"I have been using your field seeds for the past fifteen years, and think they are all you claim them, as I have never missed getting a crop of clover in the fifteen years."

C. L. BEATTY

Clinton, Allegheny County, Pa.

March 6, 1930.

"Received the four bushels of mammoth clover seed and it is the finest clover seed I ever saw."

CHANCEY COLDWELL,

Rockton, Clearfield County, Pa.



GRAINS

Corn

The best insurance against loss of labor in growing Corn is to be certain that good seed is planted. A good crop was never produced from poor seed, as a maximum yield can be expected only when there are no weak or missing stalks. To plant one bad ear means about 900 weak, barren, or missing stalks to the acre. Cultivation, fertility and drainage of the soil affect the production of Corn, but the crop depends first upon the selection of seed.

The necessity of cultivating Corn is appreciated by everyone, but the proper practices are not always known. As a three-year average, the Ohio Station found two or three-inch cultivation to be best, as either deeper or more shallow working reduces the yield of both grain and stover considerably. By the time the plants are two or three feet high the roots have spread from hill to hill and working the soil deep at this time may injure the stand.

The practice of treating Seed Corn with a disinfectant has proven to be very worth while. We can furnish the Du Bay product for this purpose at the regular retail price. As this material is classed as a poison it cannot be sent by mail, but we can send it along with the seed, or separately by express.

Varieties

At the time this guide is published it is impossible for us to know just what varieties of Corn we will have to offer, other than those listed.



LITTLE COB YELLOW DENT. A grower in a nearby county developed this variety over 40 years ago. We have sold a great deal of it and have found that it has given better satisfaction than any other variety that we have ever listed. Owing to the characteristic small cob we named it Little Cob and are selling it in increasing quantities every year. It is a carefully selected, high bred Corn, and as we sometimes find a single ear of Flint in a field of it, we suppose there was a mixture of Flint in the original selection. This may account for its very small white cob and the fact that it matures early and thoroughly.

For a quick ripening, all around Corn we know of none that will give better satisfaction. We recommend it for early ensilage, as the stalk contains more leaves than other varieties. If you are not entirely satisfied with the Corn you are growing we suggest that you give this variety a trial. It matures in about 110 days.

We have discontinued selling late varieties. The percentage of failures is too great. We believe there is no variety that will surpass Little Cob as a general all round Corn.

WOODBURN. A yellow dent variety. One of the best grain yielders at the Ohio Station.

EARLY CLARAGE. This yellow Corn matures in about 100 days and never fails to ripen. The ears are fair size. It is a very satisfactory yielder.

McGINNIS. An early white cap variety maturing in about 110 days.

ENSILAGE CORN. We have found that Red Cob, Eureka and Blue Ridge are the most popular varieties for ensilage. The Eureka and Blue Ridge are the same Corn as far as production of ears and stalks is concerned. The former seems to be a selection of the Eureka with a wider and larger grain.

Wheat

Owing to the fact that a threshing machine goes from one farm to another always carrying at least a few grains from each place, it has been extremely difficult to supply Wheat that is unmixed, but by specializing in the excellent varieties developed by the Ohio Station, we are able to furnish seed that is practically pure. Two varieties, Trumbull and Fulhio, have become very popular in states other than Ohio, owing to the fact that they are both good milling wheats and large yielders.

Wheat should be sown two bushels to the acre, as it has been shown through many tests that where this amount is used more profit is realized than where six, seven or nine pecks are sown. There is absolutely nothing in the claim that a peck or half-bushel of certain varieties is enough for an acre.

TRUMBULL. This beardless variety is a selection from Fultz. It is smooth, much liked by millers; and, what is more interesting to the grower, a large producer. Probably more of it is sold in Ohio and neighboring states than any other kind.

FULHIO. A beardless selection of Fultz introduced by the Ohio Station. While not as well known as Trumbull, it yields fully as well and is becoming popular. On a ten-year average at the Ohio Station this variety produced the second highest yield, giving 38½ bushels to the acre.

NIGGER. A bearded, heavy yielding variety. The grains are larger, plumper and harder than most soft winter kinds. We cannot recommend it too highly.



Oats

While we list below the Oats that we ordinarily can supply in any quantities, at the time of writing this it is impossible to tell what varieties we will have to offer in addition to those listed.

SCOTTISH CHIEF. For a number of years we have sold these Oats and, as they are produced plentifully in this county, we can sell them at a very satisfactory price. They come to our elevator in large quantities and we select the best crops for seed. They originated from a car of Canadian Oats which were distributed ten years ago. The Oats are heavy and plump, and large producers.

SIXTY DAY. Not only is this the earliest variety of Oats, but it is also one of the largest yielders. Owing to its extreme earliness it will make a crop where later varieties will fail. The straw is short and does not lodge, which makes it particularly desirable for a nurse crop. It has good feed value for the reason that the hull is thin and light. It is one of the best varieties for soiling in connection with Field Peas.

MIAMI. This is what the Ohio Station says: "Formerly known as Ohio No. 6203. Originated as a pure line selection from the Siberian variety in 1906. Spikelets 2-3 grained, kernels white, awns weak; straw medium stiff. Average height, 40 inches; tillering power good; medium maturity. Has the highest ten-year average yield of any variety on Experiment Station farm at Wooster."

Rye

ROSEN variety has entirely replaced the old White Rye. It produces less straw and a larger yield of grain.



Barley

ODERBRUCKER is probably the best known and largest yielding bearded Barley. We no longer try to supply the beardless varieties, as they are all small yielders and usually badly mixed. The new barbless strains such as Velvet, are replacing both the bearded and beardless.

VELVET is a new variety developed by the Minnesota Station. It is bearded but has smooth awns so that it is as satisfactory to handle as the beardless. It has a white kernel and yields as well as the ordinary bearded varieties. This type of Barley should eventually take the place of all other kinds.

Buckwheat

The value of Buckwheat as a catch crop is due to the fact that it matures in about 70 days and will ripen in the cool weather of early fall. It grows best on fertile soil but will give fair yields on soils too poor for other crops. Use 50 to 60 pounds per acre.

Of the several varieties of Buckwheat the Japanese is the most popular.

"Find enclosed money order for \$19.00 for which send us bacteria for vetch. We can get inoculation here for one-third as much as yours costs, but it doesn't do the work like yours does."

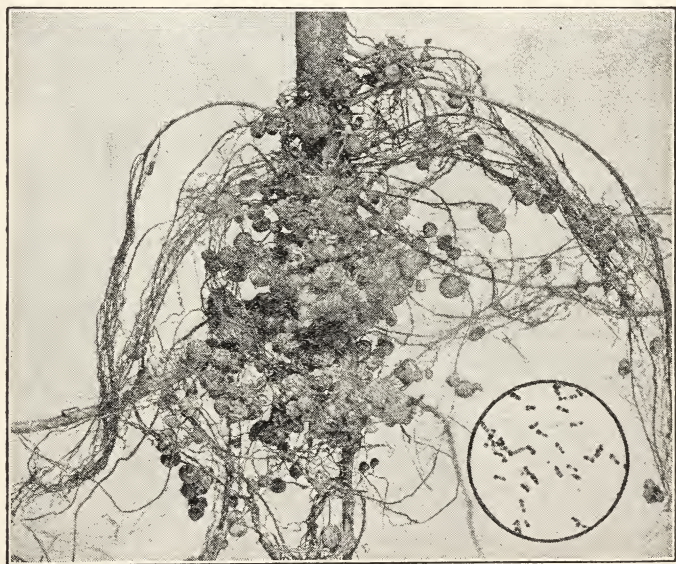
MURDOCK & MOODY,
Kosciusko, Attala County, Miss.



LEGUME INOCULATION

THERE is no question of the value of legumes on the farm. The problem is to utilize them to the greatest possible extent and make them "board themselves and pay for the privilege." If this is done legumes will have a beneficial effect upon the soil by: adding organic matter, making plant food available as the plant materials decay, and adding nitrogen by the activities of the nodule organisms.

To utilize legumes to the fullest extent it is absolutely necessary to provide the proper inoculation. What is in-



A WELL INOCULATED SOYBEAN ROOT

The nodule bacteria in the insert are enlarged almost 600 times. Success or failure with legumes depends upon the presence of these minute organisms. (Courtesy Illinois Experiment Station.)

oculation? It is the bringing together of the legume plant and the bacteria which cause nodule production. These nodules (see illustration below) are tubercle-like swellings on the roots which house millions of bacteria. These bacteria are able to take nitrogen from the air and feed it to the host plant. In this way nitrogen is supplied to the crop at no cost—the real advantage of inoculation. Only inoculated legumes can do this, as no other plants have this ability nor do uninoculated legumes. The big problem on our farms today is to return nitrogen to the soil at the least possible expense. Some farmers have waited for the development of cheaper nitrates—others have located nitrogen factories on their own farms. They grow more inoculated legumes.

In addition to adding nitrogen, inoculation often has striking immediate effects upon the yield and quality of the crop. The Wisconsin Station has found for example, that the weight of inoculated Alfalfa was considerably greater than that of uninoculated Alfalfa. Besides, the quality was better and the feeding value increased by a higher protein content. Experiments have proven that inoculated seed is much more apt to produce a good stand than uninoculated seed.

Plants become inoculated either by the proper bacteria being in the soil, or by treating the seed with a good commercial culture such as Scott's Guaranteed Bacteria. Self-inoculation cannot be relied upon unless the same crop has been grown on the same land before and nodules were developed on the roots. This is not entirely safe as the organisms die out rapidly, especially in soils that tend to be acid.

Agricultural authorities now feel that it is unwise to depend greatly upon the seed being inoculated by the bacteria in the soil. As mentioned before, these often die out die out rapidly and then they are often placed too deeply in the soil after plowing for the plants to get to them.

Seed inoculation with Scott's Bacteria is not expensive. Play safe. Treat all of your legume seed before planting.



Scott's Guaranteed Bacteria

In buying inoculating materials, there are three factors worthy of the greatest consideration. These are: ease of application, economy and guaranteed results.

Scott's Bacteria is prepared so that it can be applied easily to the seed. The cost of the bushel sizes of Scott's Bacteria is small and special prices on five bushel sizes makes inoculation costs almost negligible. We guarantee that Scott's Bacteria will produce nodules and be satisfactory in every way. If it fails to please you we will cheerfully refund the purchase price.

DRY INNOCULATION

We have always been slow in adopting and advocating any so-called new discoveries until they have been thoroughly tested and approved by authorities as well as those who make practical use of them. As a result, we have not offered the new "dry medium" legume bacteria in which some form of dry dust is used instead of a moist medium. It has been claimed that these "dry" inoculants were more easily applied and at the same time just as good or even better than the "moisture-applied" inoculants.

However, actual tests during the past two years have shown that they are not as good as the moist-soil cultures. In both laboratory and field tests, according to federal and state agricultural authorities, they have either failed altogether to produce modules or at most produced only a very few.

In the same way seed "pre-inoculated" with dry cultures before shipping has proven entirely unsatisfactory.

As a result of these facts, we will continue to sell only the "moist-soil" bacteria which has proven so satisfactory during the past fifteen years.



HOW TO ORDER

Order Early. It always pays. Prices may be no higher, but sometimes it is impossible to get the best seed late in the season.

Order Blank. Use it please. When shipping point is different from your mail address give county under each name.

Change in Price

All seed must be sold on the basis of market quotations. It is for this reason that our prices are for prompt acceptance. A slight fluctuation, however, does not affect them.

We always accept orders at the prices quoted if at all possible, but we must follow any material changes whether they are up or down.

Terms

We will ask you to kindly send a full remittance with your order, a personal check, bank draft or money order is acceptable. If you are not sure of the exact cost of your seed, just a blank signed check, protecting yourself by writing in, "Not good for over \$-----," and we will fill in the correct amount.

If you prefer, we can send your seed draft attached to bill of lading. In this way you can get the seed from your freight agent by paying for it at your bank.

References: Bank of Marysville, O.; Union Trust Co., Cleveland, O.; Huntington National Bank, Columbus, O.; your County Agent, Experiment Station or Farm Paper.



Bags

Cotton bags are still priced low. By allowing for them in your order you can lay in a supply at a reasonable cost. They are sold to you at exactly what we pay for them. It is not possible to furnish bags free without adding to the cost of the seed.

If you have a surplus of sacks you may send them and we'll be glad to use them for your order. Be sure to mark your name on them so we know who sent them and also *tell us in the order that you are sending bags.*

Delivery

Our central location enables us to guarantee prompt delivery of your orders. We are situated in the central section of Ohio, which is served by a net work of the largest and most important railroads and electric lines. Two of these steam railroads serve Marysville, while the others are accessible with only one transfer. These two lines are the Big Four and New York Central.

Marysville is the county seat of Union County, located in the west central section of Ohio. It is 30 miles from Columbus, 135 miles from Cleveland and 100 miles from Toledo and Cincinnati.

All orders are given immediate attention and carefully routed for quickest delivery. If for some reason your shipment is delayed in transit, and the seed arrives too late to use, you may return it to us transportation charges collect. Your money will then be refunded promptly.



Parcel Post

Seed may be sent by parcel post. Kindly add cost of postage according to the following table. In the first, second and third zones the weight limit is 70 pounds; in the others the weight limit is 50 pounds.

Zone Rates

ZONE

2nd up to 150 miles away	1c per lb. plus 6c
3rd up to 300 miles away	2c per lb. plus 6c
4th up to 600 miles away	4c per lb. plus 5c
5th up to 1000 miles away	6c per lb. plus 4c
6th up to 1400 miles away	8c per lb. plus 3c

NOTE: Ohio is entirely in Second Zone.

Express Rates from Marysville, Ohio Per 100 Pounds

ILLINOIS

Chicago	\$1.50
Danville	1.39
Springfield	1.84

INDIANA

Evansville	1.84
Indianapolis	1.39
South Bend	1.39

KENTUCKY

Hopkinsville	2.14
Lexington	1.39
Williamsburg	2.06

MICHIGAN

Detroit	1.24
Grand Rapids	1.39

NEW YORK

Albany	2.32
Buffalo	1.84
New York	2.44

OHIO

Athens	\$1.00
Cincinnati	1.09
Cleveland	1.09
Freeport	1.09
Mansfield	.94
Portsmouth	1.39
Toledo	.94
Youngstown	1.39

PENNSYLVANIA

Clearfield	1.84
Meadville	1.39
Philadelphia	2.32
Pittsburgh	1.54
Scranton	2.32

TENNESSEE

Fayetteville	2.44
Knoxville	2.21

WEST VIRGINIA

Bluefield	1.84
Huntington	1.39
Morgantown	1.69



We Pay The Freight

On orders for three hundred pounds or more we pay the freight charges to thirteen of the East Central States. While we do not pay express charges we will, on orders of 300 pounds, allow the equivalent of the freight charges.

The states to which this policy applies are as follows:

Ohio	Illinois	Kentucky
Pennsylvania	Virginia	District of
West Virginia	Michigan	Columbia
Maryland	New Jersey	Delaware
New York	Indiana	

Outside those states we will allow 35 cents per one hundred pounds toward the transportation charges on orders totaling 300 pounds.

Please bear in mind that in spite of our reasonable quotations and the freight paid provision we commend Scott's Seed to you primarily on the grounds of superior quality. There is your real opportunity to save.



Legal Weight and Quantity per Acre

Wt. Per Bu. Pounds Sown Per Acre

<i>Legumes</i>		
Alfalfa	60	10 to 15
Clovers:		
Red	60	10 to 15
Mammoth	60	10 to 15
Alsike	60	5 to 8
Sweet (hulled seed)	60	12 to 15
(unhulled)	30	15 to 20
Crimson	60	10 to 14
White Dutch	60	6 to 8
Japan	25	5 to 7
Soybeans	60	90 to 150 drilled solid
		45 to 60 in rows
Field Peas	60	90 to 100 with oats
Vetch	60	25 to 45 with 1 bu. rye
<i>Grasses</i>		
Timothy	45	10 to 15
Canada Blue Grass.....	14*	20 to 30
Kentucky Blue Grass.....	14*	30 to 35
Orchard Grass	14	25 to 30
Meadow Fescue	24	20 to 24
Redtop	14*	14 to 20 solid seed
Lawn Grass Seed.....		100
<i>Forage Crops</i>		
Dwarf Essex Rape.....	50	4 to 7
Millet	50	40 to 50
Sudan Grass	40	20 to 30
Sorghum or Cane.....	50	70 to 90
Sunflower	32	6 to 8
<i>Grain</i>		
Barley	48	90 to 100
Buckwheat	50	50 to 60
Corn (field)	56	8 to 10
Oats	32	64
Rye	56	80 to 100
Wheat	60	120

*Legal weights for grasses given, actual weight of recleaned seed much greater.

How to Order Scott's Field Seeds

ORDER BLANK on opposite side for your convenience. Be sure to give shipping address if it is not the same as your postoffice address.

TERMS. Kindly include full remittance with your order. Your personal check, a bank draft, money order or cash is acceptable.

FREIGHT IS PAID on 300 pounds or more to these states: Ohio, Pennsylvania, West Virginia, New York, Kentucky, Virginia, Tennessee, Indiana, Illinois, Michigan, Delaware, New Jersey, Maryland.

Outside these states we allow 35c per hundred pounds toward the shipping charges, on 300 pounds.

SAFE DELIVERY of your order is guaranteed.

O. M. Scott & Sons Co., Marysville, Ohio

OTHER SCOTT PUBLICATIONS SENT FREE FOR THE ASKING



LAWNS—a small booklet of condensed facts about the mechanics of lawn making and care. Can be read in thirty minutes.

LAWN CARE—Four-page bulletin published five times yearly and containing timely suggestions about lawn maintenance.

BENT LAWNS—in which the finest of turf grasses, namely, Creeping Bent, is fully described. Gives full information on the seed and and stolon method of planting.

QUANTITY	NAME OF SEED	PRICE	TOTAL
BAGS	<i>See Prices</i>		
	TOTAL AMOUNT		

O. M. SCOTT & SONS COMPANY

FIELD SEEDS

MARYSVILLE, OHIO

January 20, 1931.

Mr. Sower of
Scott's Seed.

Dear Sir:

Your copy of the 1931 Seed Guide is enclosed. Again it has been revised and re-written to provide you with the latest data about growing farm crops.

The purpose of this letter is to give you late facts about the field seed markets and prices as well. You will probably find all of the information on the inside pages interesting, but we suggest particularly that you read about Mammoth Clover. Right now it is the real buy in field seeds.

Although prices are below those of normal years, the very low prices of 1930 are not duplicated. The production of clover seed was much less last year, while timothy was almost a complete failure. In contrast, the harvest of soybeans for seed was the largest in a number of years, while the west also produced a large crop of alfalfa. This will be a good year to re-seed alfalfa fields that are running out.

You have the privilege of buying Scott's Seeds now for either immediate or future shipment. Later prices will be sent to you regularly with late bulletins about the field seed situation.

The reply envelope and order blank are sent with the Guide for your convenience in ordering.

Yours very truly,

O. M. SCOTT & SONS CO.

P. S. If you wish samples or further information about any seed, the enclosed card will bring both.

SCOTT'S SEED NEWS

MAMMOTH CLOVER IS A REAL BUY IN 1931

Alfalfa Also Very Attractive

Mammoth Clover holds an unusual position in the 1931 field seed situation. Ordinarily this type of clover is not produced in as great abundance as Red Clover and the seed is priced higher because of this. Then there is always a big demand from those who have learned to appreciate the good qualities of Mammoth Clover. This year we will be able to sell Mammoth at the same price as Red Clover—at least in the early part of the season. Even more important than this, however, is the fact that the Mammoth seed is of very good quality. We can supply bright and clean seed, free from weeds—in fact, the best seed we have seen in many years.

One reason for the preference of some to Mammoth is because it does better on poor soils than Red Clover, and requires less lime. Also, as it ripens about three weeks later than Red, it is much better for sowing with Timothy or Redtop as they mature later than Red but at about the same time as Mammoth.

You can purchase Scott's Mammoth Clover with absolute sureness of getting seed true to name. We positively guarantee the genuineness of any Mammoth clover seed purchased from us and will refund the full purchase price of any which does not prove to be genuine.

Alfalfa

Along with Mammoth Clover, Alfalfa seed presents a very favorable condition for 1931. There was an unusually large production of Alfalfa in the west and it matured plump and especially bright because of the absence of rain during the summer. Alfalfa is cheaper than it has been for years and we will be able to supply good seed of hardy strains. We have Nebraska seed that was grown just 25 miles south of the Dakota line, at an attractive price. Then, too, for the first time in many years we have been able to secure a small amount of Canadian Variegated seed. Some growers prefer this even to Grimm and are willing to pay a premium for it. Grimm is also cheaper this year and the seed that we have is of fine quality.

Red Clover Crop Below Normal

In contrast to 1929, there was a below-normal crop of Red Clover in 1930. The sections producing the hardest seed were especially short, so buyers should be more cautious than ever to secure seed adapted to growth in their territory.

We look for quite a large demand for Red Clover this spring because of

so much of the 1930 seedling having been burned up by the drought. Even a normal demand for Red Clover would probably be sufficient to send the price up after trade starts.

Good Alsike Available

It is a satisfaction to report that we have been able to secure some fine Alsike seed for our customers in 1931. The Ohio grown Alsike has not been very good for a number of years, but we are very proud of the Alsike that we will be able to send out this spring. The seed is bright and clean and especially free from other crop seeds as well as weeds.

Considering the prices of other clovers, our Alsike is quoted very low and we believe it will be bought heavily this spring as it goes so far in sowing and gives a cheaper seeding than any of the other clovers.

Grass Seeds Higher

After a period of several years of normal yields the production of most varieties of grass seed was much below normal last season. This was particularly true of Kentucky Bluegrass, the grass more in demand than any other kind. Since the summer of 1930 the market has advanced rather steadily until now it is quoted at about 90% above a year ago. In line with Bluegrass, Redtop, Orchard Grass, and the like are also higher but not to such a marked degree.

Good Seed Oats

The Oats crop turned out very well in our vicinity last year. Because of this we will have some fine seed oats to offer, all of which will be above average in weight and of excellent germination. Our 60-Day variety continues very popular for a nurse crop, while the Scottish Chief and Miami varieties have been among the best yielders in many tests conducted in Ohio and Pennsylvania.

Timothy Seed is High and Scarce

The production of Timothy seed in 1930 fell very much below normal. Added to this situation, and of at least equal importance, is the fact that practically every pound of old seed was sold during the summer of 1930. This lack of carry-over has combined with a short crop to make Timothy seed the highest it has been in several years and the chances are that there will be even further advances as buying gets under way. We are suggesting to our customers that they anticipate their requirements as early as possible so that they will not be disappointed later on.

Soybeans Lower

BLACK VARIETIES SCARCE

In spite of the drought of 1930 the production of Soybean seed in most sections was very good. Soybeans have increased in favor among many farmers during the past summer because of their good drought resisting quality. In most instances the beans yielded well and matured a fine crop of hay or seed, although the seeds are somewhat smaller than in an average year.

The one exception to good crops of soybeans was the Wilson variety. The eastern section, where most of these are raised, produced a very much below normal crop so they are high and scarce. Several of the other late varieties can be recommended as a substitute for Wilson and the Virginia will no doubt prove most popular. This variety goes far in seeding and is very satisfactory for hay on most soils.

Scott's Bacteria Reduced

We are pleased to announce that we will be able to reduce our price on legume inoculation in 1931. The new price will be 75c for a bushel size can of bacteria to treat the clovers and other small seed legumes. The half bushel size will be 40c while our special can with sufficient cultures to treat five bushels of seed will be \$3.00, or at the rate of 60c per bushel of seed to be treated. This makes inoculation very reasonable as the cost in most instances of treating the small seeds will be less than 15c per acre.

Inoculation for soybeans will continue at 50c for the bushel size and \$2.00 for the five-bushel size. In spite of these lower figures we will still supply Scott's Bacteria in the moist sand medium which has proven to be the most efficient method of inoculation since the advantages of this treatment have become known. Before using the new "dry" type of inoculation we suggest that you write your experiment station.

Please read page 63 in the Seed Guide about prices and why our quotations may change

Freight is Paid on orders for 300 lbs. to stations in Ohio, Penna., W. Va., N. Y., Ky., Va., Md., D. C., N. J., Del., Mich., Ind., Ill. (See Guide p. 71.) In other states we allow 50c per 100 lbs. toward shipping charges on 300 lbs. **Safe Delivery** of your order is guaranteed

CLOVERS	
(All home grown)	
Red	\$17.00 bu.
Mammoth	17.00 bu.
Alsike	15.00 bu.
White Sweet	6.50 bu.
Yellow Sweet	6.50 bu.
Grundy County Sweet	6.50 bu.
Hubam	.20 lb.
Unhulled Sweet	.09 lb.
Crimson	7.00 bu.
White Dutch	.45 lb.
Korean (Lespedeza)	.39 lb.
Japan (Lespedeza)	.20 lb.

ALFALFA	
Kansas	\$14.00 bu.
Nebraska	15.50 bu.
(Grown 25 miles south of the Dakota line.)	
Canadian Variegated	21.50 bu.
Grimm	22.50 bu.

TIMOTHY	
Timothy	\$5.50 bu.

OATS	
60 Day	\$.85 bu.
Miami	.85 bu.
Scottish Chief	.75 bu.

GRASSES	
Kentucky Bluegrass	\$.40 lb.
Canada Bluegrass	.35 lb.
Redtop	.28 lb.
Meadow Fescue	.13 lb.
Orchard Grass	.20 lb.
Rye Grass	.10 lb.
Pasture Mixture	.25 lb.
Scott's Lawn Seed	.55 lb.

SOYBEANS	
Manchu	\$1.90 bu.
Ito San	2.25 bu.
Illini	2.25 bu.
Midwest	2.45 bu.
Ebony	3.00 bu.
Sable or Peking	3.10 bu.
Virginia	2.90 bu.
Wilson	3.25 bu.

We can supply Soybean hay and Soybean meal. Write for prices.

SUNDY SEEDS	
Velvet Barley	\$1.25 bu.
Oderbrucker Barley (Bearded)	.95 bu.
Canada Field Peas	2.75 bu.
Cowpeas	3.00 bu.
Spring Vetch	.07 lb.
Hairy Vetch	.12 lb.

Rape	\$.09 lb.
Sudan Grass	.10 lb.
Buckwheat	1.75 bu.
German Millet	2.75 bu.
Hungarian Millet	2.50 bu.
Amber Cane	2.50 bu.

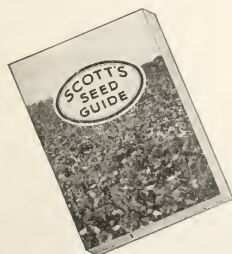
SEED CORN	
Little Cob Yellow Dent	\$4.25 bu.
Improved Clarage	3.50 bu.
Extra-early Clarage	4.00 bu.
Woodburn	3.50 bu.
Golden Glow	3.50 bu.
Blue Clarage	3.50 bu.
Reid's Yellow Dent (Late)	4.00 bu.

ENSILAGE	
Blue Ridge, Eureka	4.00 bu.
Red Cob	3.50 bu.

SCOTT'S BACTERIA.			
	1/2-bu.	1-bu.	5-bu.
For Clovers,	size	size	size
Alfalfa, etc.	\$.40	\$.75	\$3.00
For Soybeans	.30	.50	2.00

BAGS	
New Cotton	30c
Patched Cotton	20c
Burlap	No charge

Above prices for more than 10 pounds. Five to ten pounds add 2c per pound; less than five pounds add 5c per pound.



1931 Seed Guide

Extra Copies Available for Your Friends

Send Us Their Names

As in all previous issues the 1931 edition of Scott's Seed Guide has been brought right up to the minute and gives the latest information available about the different farm crops. We feel sure that you will find the time profitably spent if you read this 1931 guide clear through just as soon as possible.

By using the enclosed card you can do your friends and neighbors on farms a real favor. On it you can send their names, so we will be able to mail them our 1931 Seed Guide. We believe this effort will be appreciated by anyone interested in making a profit from his farming operations. The card is ready for mailing and does not need a stamp as we have prepaid the postage.

72 Pages
Illustrated
Up-to-the-minute

A Message for You

—Prices on Field Seeds

—Last Minute Market News



We suggest that you read
this letter now, and then
study the Seed Guide
at your leisure



O. M. SCOTT & SONS CO.

Claims for "Dry" Type of Inoculation Not Substantiated

During the last few years there has come onto the market a new type of legume inoculation. These "dry inoculants" consist of some form of dust which is applied directly to the seed without the use of water. They depend entirely upon the clinging power of the dust to secure treatment of each seed.

While the theory may sound good—as it would require less time and effort—it has not worked out this way in practice. The superiority of "moist applied inoculants" was conclusively proved in 1929 and again in 1930 by state and federal agricultural authorities and by growers themselves. One large grower has written us as follows:

We have tried out several brands of inoculation in fields where we were using moist cultures and have always found the moist cultures produced the most nodules on the plants. Also we found better yields and better quality peas. In fact we practically lost about ten acres of peas last year where we had used a dry inoculation.

In numerous greenhouse and field tests the U. S. D. A. found that none of the "dry-applied" materials equaled in nodule formation the inoculants applied with water. An almost complete lack of the proper bacteria from the dry materials was indicated.

As the only purpose of inoculation is to introduce bacteria which will promptly form nodules on the roots of the legumes

for which they are intended, the failure of "dry" materials to do this indicates their complete failure. Therefore the only safe materials to use are those "moist-applied" such as the moist soil-mixture cultures already known to be successful such as Scott's Guaranteed Bacteria.

"PRE-INOCULATED" SEED.

Another claimed advantage of "dry" inoculation was that this could be used to treat seed in bulk, weeks or even months before it was to be used. This practice has also proven unsatisfactory as repeated tests with "pre-inoculated" soybean seed conclusively showed that this method was ineffective in the production of nodules.

It has long been maintained by the authorities on inoculators that bacteria die rapidly in dry materials, that they perish very rapidly on seed inoculated too far in advance of sowing, and it has now even been found that the bacteria die off quite rapidly in ordinary field soils when dry conditions prevail. As they die rapidly in dry soils it naturally follows that they would do the same in a dry culture medium.

Legume inoculation will be more necessary and important in 1931 than before because of the drouth. It therefore behooves growers to use only the proven types of inoculation.

Before using "dry inoculation" write your own experiment station about it.

OTHER SCOTT PUBLICATIONS SENT FREE FOR THE ASKING



LAWNS—a small booklet of condensed facts about the mechanics of lawn making and care. Can be read in thirty minutes.

LAWN CARE—Four-page bulletin published five times yearly and containing timely suggestions about lawn maintenance.

BENT LAWNS—in which the finest of turf grasses, namely, Creeping Bent, is fully described. Gives full information on the seed and and stolon method of planting.

HANDY INDEX TO SCOTT'S SEED GUIDE

Soybeans.....	Page 11
Sweet Clover.....	" 27
Alfalfa.....	" 37
True Clovers.....	" 45
Grasses.....	" 54
Catch Crops.....	" 58
Grain.....	" 60

HOW TO ORDER

Page 68